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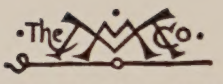

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STABILIZING THE DOLLAR

A PLAN
TO STABILIZE THE GENERAL PRICE LEVEL
WITHOUT FIXING INDIVIDUAL PRICES

BY

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To

JOHN ROOKE

SIMON NEWCOMB

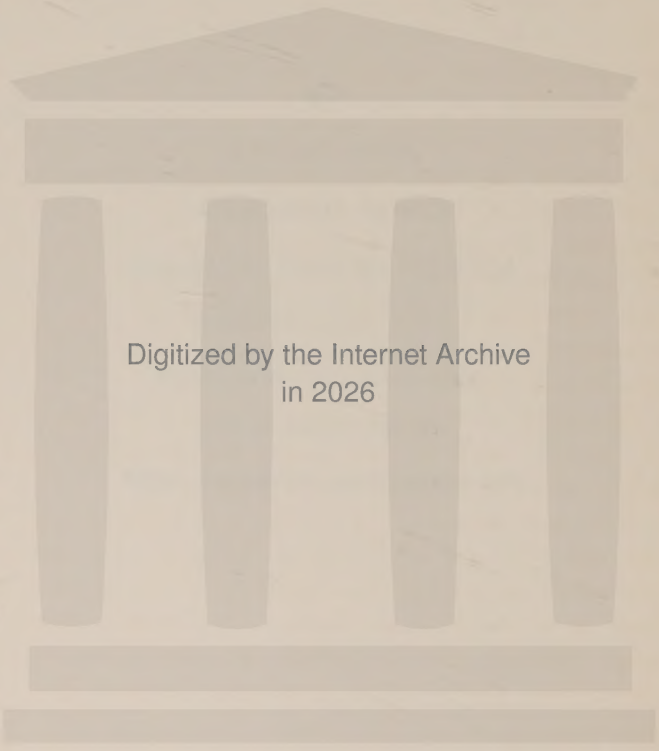
ALFRED RUSSEL WALLACE

AND ALL OTHERS

WHO HAVE ANTICIPATED ME

IN PROPOSING PLANS

FOR STABILIZING MONETARY UNITS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PREFACE

THE fundamental fact on which the proposal of this book is based is that the purchasing power of the dollar is uncertain and variable, that is, that the price level is unstable.

The war has caused the greatest upheaval of prices the world has ever seen. Inseparably connected with this upheaval is grave and world-wide industrial discontent. Because of this and because of the perplexity of business men as to future movement of prices, there has been much discussion going on of the question whether the level of war prices will drop or whether it can be stabilized.

To show that permanent stability can be secured is the chief aim of this book; and a specific and detailed plan for this purpose is presented.

The first sketch of this plan was published in 1911 (in my *Purchasing Power of Money*). It was later presented before the International Congress of Chambers of Commerce at Boston, September, 1912, and again before the American Economic Association, December, 1912. The plan was elaborated in the *Quarterly Journal of Economics*, February, 1913.

In October, 1917, I gave the Hitchcock lectures at the University of California, using much of the material published now, for the first time, in this book. In the spring of 1918 a Committee of the American Economic Association, on the Purchasing Power of

Money in relation to the War, indorsed the principle of stabilization and commended the subject to the earnest attention of statesmen and economists.

By this time academic economists had been largely won over to the idea, it having run the gantlet of their criticism for several years. The general support of economists marks the first milestone in the progress of the idea.

Latterly a beginning has also been made toward arresting the attention of the business and industrial world, the interests of which are most at stake. Their general approval, if obtained, will mark the second milestone.

Until recently it has seemed premature to ask men in political life to press for the actual adoption of the plan. Their action, if taken, will mark the third and final milestone.

Appendix IV, § 3, gives the names and comments of prominent leaders in all three fields — economics, business, politics — who have approved the idea.

When I first propounded the plan for stabilizing the dollar I supposed that I was the first to do so. It soon appeared, however, that the same thought had occurred independently to a number of others.

The bibliography in Appendix VI gives references to the published writings in which substantially the very plan here presented has been outlined by others.

There are a few anticipators who have never published their views but have kindly sent me copies of manuscripts or letters describing them. The following is a complete list in chronological order of anticipators, so far as known to me: John Rooke, 1824; the late Simon Newcomb, astronomer and economist, 1879;

Professor Alfred Marshall, Cambridge, 1887; Aneurin Williams, M.P., 1892; Professor J. Allen Smith, now Dean, University of Washington, 1896; D. J. Tinnes, Hunter, North Dakota, 1896; William C. Foster, Boston, Mass., 1909; Professor Harry G. Brown, University of Missouri, 1911; Henry Heaton, Atlantic, Iowa, 1911.

This list could be lengthened considerably if the authors of plans radically different, but having the same purpose in view, were to be included. Among these authors is the late Alfred Russel Wallace, the naturalist.

The only essential feature of the plan in which, apparently, I have not been anticipated is the provision (mentioned at the end of Chapter IV and described, in detail, in Appendix I, § 2) regarding speculation in gold.

The fact that the plan has been worked out independently in so many cases and by men so able and clear-headed is, I venture to think, strong evidence of the soundness of the proposal. It also affords me the opportunity to promote the plan the more impersonally and, I hope, with more chance of success than if it were merely one man's idea.

My thanks are due to the large number of persons who, through many years, by criticisms and suggestions, have helped me gradually develop the present formulation of the plan. I wish especially to express my thanks to Prof. Wm. H. Taft and Mr. Morison R. Waite, who supplied important legal data bearing on the problems of Appendix I, § 6; to Dr. Royal Meeker, Prof. Wesley Clair Mitchell, Dr. B. M. Anderson, Jr., and Prof. Percy W. Bidwell, who supplied

valuable criticism of portions of the appendix; to Mr. Philip P. Wells, formerly legal counsel of the National Conservation Association, who has helped frame the tentative draft of an act to stabilize the dollar given in Appendix I, § 9; to my brother Herbert W. Fisher, whose criticisms have assisted me in improving the form of presentation; and to Miss Clara Eliot, formerly instructor in sociology in Mills College, who has helped at every stage of the work.

Every objection or difficulty which has been raised has been, I believe, frankly faced and discussed. Such discussion has been relegated to the appendix, in order that the text might be confined to stating the plan which, as will be seen, is so simple that any one can readily grasp it. It has been my ambition to reach and convince every available reader.

If the particular plan here proposed is not the best to accomplish its purpose, I hope a better one will be proposed.

It is also my hope that readers will spread the idea of stabilization by whatever methods seem to them most effective for promoting legislative action, national or international. I should be glad to be kept informed of such activities as well as to receive suggestions and criticisms.

As a movement for stabilization, in some form, seems inevitable in the immediate future, I shall be glad to make the best use I can of the return postal card inserted here for the convenience of the reader, should he desire to stamp, sign, and mail it.

IRVING FISHER.

NOVEMBER, 1919.

SUGGESTIONS TO READERS

1. The general reader will be chiefly interested in the five chapters of the text, of which Chapter IV is the chief.

2. Those who find any difficulty in accepting the argument in the text are referred to Appendix II, of which § 1 and § 3 will probably be found of most general use.

3. The General Summary is designed for those who think they have not time to read the book.

4. The Summary by Sections will supply the starting point for reading any special part of the text desired.

5. The analytical table of contents, the index, and the running page headings have been constructed to facilitate the use of the book as one of reference.

6. Chapter II may help those who do not yet believe that the so-called "high cost of living" is, at bottom, a *shrunken dollar*.

7. Chapter III is commended especially to those who imagine that there is little wrong with our present monetary system.

8. Appendix IV, § 3, is for those craving good company in espousing new ideas.

9. Appendices I and III and Appendix II, § 2, are intended chiefly for technical economists.

10. Appendix VI gives references for further study and verification.

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(In all cases the diagrams are plotted on the "ratio chart" in which the vertical scale is so arranged that the same slope always represents the same percentage rise. For a full description of the advantages of this method the reader is referred to "The Ratio Chart," Irving Fisher, *Quarterly Publications of the American Statistical Association*, June, 1917.)

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GENERAL SUMMARY

The war has wrought havoc with monetary systems throughout the world. War finance has given us inflation of various kinds — paper money inflation and bank-credit inflation among belligerents and gold inflation among neutrals — with the result that everywhere prices have risen, *i.e.* the purchasing power of money has fallen, even where there has been no scarcity of goods.

The war has thus greatly aggravated the evil of a rising cost of living of which there had already been a growing and world-wide complaint. This pre-war high cost of living was, likewise, largely due to monetary inflation.

Prior to 1896 there was equal dissatisfaction over falling prices attributable, in part, to the fact that the volume of gold and other currency did not keep pace with the requirements of business.

These two experiences in a single generation have set a larger number of persons thinking on the instability of monetary units than ever before in history.

The cumulative effect is a rapidly spreading consciousness that the price level, on which business is conducted, is now largely at the mercy of monetary and credit conditions. To-day the general public is willing to acknowledge, as before the war it was not, that the tide of prices will rise with a flood of gold or paper money or bank credit. As a consequence there

is coming, slowly but surely, a revolution in economic thought similar to the revolution in astronomic thought begun by Copernicus.

Just as we then learned that the sun and moon and stars do not really rise and set — though they move somewhat — but that what so appears is really the revolution of the earth on its axis, so we are now learning that commodities as a whole do not really rise and fall much but that what so appears is really the gyrations of the dollar.

The truth is, that the purchasing power of money has always been unstable. The fundamental reason is that a unit of money, as at present determined, is not, as it should be, a unit of purchasing power, but a unit of weight. It is the only unstable or inconstant unit we have left in civilization — a survival of barbarism. Other units, the yard, pound, bushel, etc., were once as unstable and crude as the dollar still is, but, one after another, they have all been stabilized or standardized.

There was, until recently, ample excuse for an unstable dollar. Up to the present generation no instrument for measuring its aberrations had been devised. In the same way, until the weighing scales were devised, weights could not be standardized, and until instruments for measuring electrical magnitudes were invented, electrical units could not be standardized. But for many years we have now possessed in the "index number" of prices the necessary instrument for measuring the value of the dollar in terms of its power to purchase goods.

One of the most suggestive signs of the times is that this instrument for measuring changes in the purchasing

power of money has recently been utilized in adjusting wages and salaries to the high cost of living, *i.e.* to the depreciated dollar. A number of commercial concerns and banks, and some official agencies have amended wages by use of an index number of the cost of living.

I believe it is manifest destiny that this principle will be utilized more generally to safeguard agreements made at one date to pay money at another date. With our present unstable dollar, the just intent of such agreements is constantly being balked by a change in prices. Gradually such corrections of the dollar will break down the popular superstition that "a dollar is a dollar"; for every time we correct the dollar we convict it of needing correction. Ultimately the correction will surely be applied not, as at present, as a patch on the dollar from the outside, but by incorporating it in the dollar itself.

Various methods for accomplishing this have been proposed. The one elaborated in this book is to vary the weight of the gold dollar so as to keep its purchasing power invariable. We now have a gold dollar of constant weight and varying purchasing power; we need a dollar of constant purchasing power and, therefore, of varying weight.

In this way we can control the price level. The more gold in the dollar the greater its buying power and the lower the price level. If Mexico should adopt our dollar (instead of its present dollar of half the weight of gold), the price level in Mexico would be cut in two. Or, if we should adopt the Mexican dollar instead of ours, our price level would be doubled. So if prices tend to rise or fall, we can correct this

tendency by loading or unloading the gold in our dollar, employing an index number of prices as the guide for such adjustments.

The process for doing this is as simple as clock-shifting for daylight-saving and would produce its effects as unobtrusively. Whether this or some other method be the particular one finally adopted for reaching the desired end, it is of the utmost importance, in the interests of justice to creditor and debtor, stockholder and bondholder, employer, employee, insurance beneficiary, savings bank depositor, trust foundations, public utilities, etc., that some method of stabilizing our monetary units shall be adopted as one of the fundamental measures of reconstruction, relating to the currency.

Otherwise we shall perpetuate a chief source of social injustice, discontent, violence, and Bolshevism. Only one real obstacle stands in our way — conservatism.

But to-day, as a result of the war, there is a new willingness to entertain new ideas. That is, the war has loosened the fetters of tradition. It was the French Revolution which led to the metric system. It would not be surprising if, as is being suggested, this war should give Great Britain a decimal system of money, revise the monetary units of the nations so that they shall be even multiples of the franc, give us an international money and stable pars of exchange and, as the greatest reform of all, as well as the simplest, give us a monetary system in which the units are actually units of value in exchange, as they ought, and were intended, to be.

SUMMARY BY SECTIONS

Chapter I. The Facts

1. Index Numbers. An index number of prices shows the average percentage change of prices. Thus, taking 1913 as a basis for comparison and calling its price level 100%, the index number representing the price level of 1917 was 176%, and of 1918, 196%. There are many different methods of computing index numbers, but their results usually agree approximately. (Figures 1 and 2.)

2. Medieval Price Levels. Prices have usually risen. In France, before the war, prices were five or ten times those of a thousand years before. Prices have often risen much more than this, especially after paper money inflation, as in the French Revolution, in the American Revolution, and in the present war, especially in Russia.

3. A Century and a Quarter of Price Movements before the Great War. (Figure 3.) Between 1789 and 1809 prices doubled in England; between 1809 and 1849 they fell all the way back, and more; between 1849 and 1873 they rose 50%. Between 1873 and 1896, in gold standard countries prices fell, while in silver standard countries prices rose. Between 1896 and 1914 prices in the United States and Canada rose 50%, and in the United Kingdom, 35%.

4. **Price Movements during the Great War.** During the war prices in the United States rose seven or eight times as rapidly as in the last-named period. In Europe the rise was even faster, — fastest of all in Russia. Prices doubled in the United States and England, trebled in western Europe, and increased ten- or twentyfold in Russia. The purchasing power of a dollar to-day in the United States is about that of 35 cents in 1896.

Chapter II. The Causes

1. **False Scents.** Of forty-one causes alleged for the high cost of living, some are important factors in raising particular prices, but none of them, except the war, has been an important factor in raising the general level of prices, and that factor, of course, only recently. Prices have risen where there were and where there were not trusts, trade unions, tariffs, luxury, advertising, militarism, sanitation, the individual package, etc.

2. **Profiteers, Speculators, and Middlemen.** Speculation regulates but seldom successfully manipulates price movements. Middlemen's profits have declined while prices were rising. (Figure 4.)

3. **Circular Reasoning.** High prices of labor may tend to raise prices of commodities and *vice versa*. But these and other influences *between* two classes of prices do not explain the general rise of all classes of prices. Prices cannot lift themselves by their own bootstraps.

4. **The Error of Selecting Special Cases.** No one commodity is important enough to influence greatly the price level. Wheat must rise 20% to raise the price level 1%, other things equal.

People unconsciously pick out special *exceptional* cases of commodities, the supply of which has decreased or the demand for which has increased, without realizing that they are exceptional. The more exceptional they are the more publicity is given to them, and the public is given a wrong perspective.

5. The Argument from Probability. Most would-be explanations make one fatal mistake of looking only at the goods side and not at the money side. When 216 out of 243 commodities rise in price between 1896 and 1913, the remarkable coincidence can be most simply explained by assuming a common cause, the cheapening of the dollar. Such a simple explanation is more likely to be correct than the concurrence of separate explanations for the many commodities.

6. The Argument from Statistics. Figures for crops and trade and estimates of national income show in general no progressive scarcity of goods between 1896 and the World War to explain rising prices but, on the contrary, a general progressive abundance. Even during the war the volume of trade in the United States increased somewhat. Mr. O. P. Austin has shown that during the war there has been a rise in the prices of goods not used in war, such as Manila hemp in the Philippines, sisal grass in Yucatan, and diamonds in South Africa, even in the countries producing these goods and far removed from the seat of war.

Lord D'Abernon has shown that old books, prints, and coins, having no cost of labor and materials, have risen.

7. Price Movements Vary with Monetary Systems. Countries of like money have like price movements and countries of unlike money have unlike price move-

ments. Thus the price movements of gold standard countries are very similar (Figure 5), and the price movements of silver standard countries are similar; but the price movements of gold standard countries differ from those of silver standard countries as the ratio of gold to silver changes. Countries of exceptional standards have exceptional price movements. (Figures 6, 7, and 8.) During the World War the prices rose differently in different countries according to their different degrees of inflation.

8. **Price Movements Vary with the Money Supply.** The price level fluctuates largely with the fluctuation in the quantity of money. (Figure 9.) Great increases in the production of the money metals as in the sixteenth century and in the '50s and again in the '90s of the last century, are followed by great price upheavals. During the Great War the price level in various countries was found to vary with the quantity of money.

9. **Kinds of Inflation.** Besides the inflation from great issues of paper money, there is gold inflation, such as the United States experienced in 1915–1917; and credit inflation, such as all belligerents experienced.

10. **Extent of War Inflation.** Outside of Russia this is about threefold, money having increased from 15 to 45 billions and deposits from 27 to 75 billions. Prices have risen accordingly.

11. **Money Illusions.** Money always *seems* scarce even when superabundant. The individual always wants more than he has and is apt to think that a whole country would be benefited by more money. He doesn't realize that the more money there is the less it will buy. He keeps thinking of a dollar as fixed.

Some allege that gold is stable because its price is

constant. But gold is worth about $20 an ounce merely because an ounce of gold *is* about twenty dollars. Gold is fixed only in terms of gold, not in terms of the other things it purchases. A cheapening of gold cannot express itself in a lower price of gold but only in a higher level of prices of other things.

12. **The Instability of the Gold Standard as Compared with an Egg Standard and Others** is as great, and greater than that of a carpet standard. (Figures 10, 11, and 12.)

13. **Seeing Ourselves as Others See Us.** When prices in gold countries were going down and those in silver countries were going up, the Londoner would say that Indian prices rise because silver is depreciating and the Hindu would say that English prices fall because gold is appreciating. Each sees the other's change but finds it hard to realize his own, just as we find it hard to realize that the earth revolves.

14. **A Visit of Santa Claus** is supposed to double the money in every pocket, till, and bank. The next day the average man has twice the money he needs to carry. He spends the surplus and this extra demand for goods raises prices. But since this surplus money is still in circulation, so it is spent again and again, raising prices until they double, when it ceases to be a surplus; for at these prices twice the pocket money, till money, and bank money used before are needed.

Something like this happens when gold miners bring gold to the mint. They can't carry the new gold in their pockets. They spend most of it and so bid up prices in the mining camp. Then the holders of this gold spend it outside of the camp where they can buy cheaper. This raises the prices outside. Thus the

new gold pursues low prices throughout the world and raises them.

15. **Tracing the Invisible Source of the Tide.** The rise of prices from inflation seems mysterious because, in any individual case, such as the rise of butter at a grocery store, the only visible reason is the rise of some other price, such as the wholesale price of butter. The effect of the abundance of money among the grocer's customers is too small and gradual to be observed. But this small, unobserved element was also present as a part explanation of the rise of the wholesale price and of every anterior price which helps explain that price. This element, apparently so small in any one market, turns out to be the large element when all markets are considered.

16. **Other Causes than Money** include bank deposits, the velocity of circulation of money and of deposits, and the volume of trade. Usually the chief factor is money.

Chapter III. The Evils

1. **The Evil of High Prices Is Not General Impoverishment.** If all prices and incomes rose equally, no harm would be done to any one. But the rise is not equal. Many lose and some gain.

2. **Contracts Upset.** When prices rise, the creditor loses; when they fall, the debtor loses.

3. **Salaries and Wages Slow to Be Adjusted.** They rise or fall more slowly than prices. The purchasing power of wages just before the United States entered the war averaged only two thirds of what it was ten years earlier and after the war it was still less.

4. **Rates Fixed by Law or Custom Also Slow.** Trolley

fares, for instance, remained the traditional five cents through two decades of rising prices.

5. Periods before and after 1896 Contrasted. Before 1896 the "bloated bondholder" was gaining. Money lenders like Russell Sage rolled up wealth. They could not have done so after 1896. Even had they saved every penny of interest and compounded it, they would have had less actual purchasing power now than when they started. The newly rich to-day are not bondholders but stockholders.

6. The Fault Is Not Personal but Social, so that we ought not to blame the lucky winners in the lottery but abolish the lottery.

7. Two Illustrative Cases. A working girl who in 1896 put a hundred dollars in the savings bank and let it accumulate at 3% would now have nominally twice what she put in, but prices are more than two and a half times what they were in 1896. Likewise the bondholder has had no real interest. He has cut his coupons and cashed them, but his principal, nominally intact, is, in actual purchasing power, less than half what it was. He has been, in effect, eating up his capital.

8. The Extent of Social Injustice. Probably a hundred billions of dollars' worth of purchasing power have actually, though not nominally, changed hands since 1896 through the depreciation of the dollar.

9. Uncertainty. Such losses would be largely forestalled if they could be foreseen. But few except speculators even try to foresee price movements. The chief evil of an unstable dollar is its uncertainty.

10. Trade Cycles. When prices rise, great profits lead to overextension of business and credits and some-

times to a crisis, after which contraction leads to a fall of prices and depression of trade. The unstable dollar is a fundamental element in these cycles.

11. **Resentment and Violence.** The fact that the evil effects of an unstable dollar are usually not attributed to their true cause results in suspicion, class hatred, and violence.

12. **Falling as Well as Rising Prices Cause Discontent.** *E.g.* before 1896 the western farmer hated the eastern capitalist whose mortgages he found increasing in weight owing, he thought, to some manipulation of the market of money or produce or both.

13. **War Prices Cause Discontent.** Before the war the rising cost of living was making Socialists, and the fear of class war within Germany was one reason for precipitating a war with other nations. Likewise the rise of prices during the war is a chief cause of the popular unrest we now find.

14. **Adjustments Most Needed, the Most Unpopular.** *E.g.* railways and landlords have long suffered from the rise of prices, but the public has all the more strenuously opposed a corresponding rise of their rates or rents. Even the employer who has gained by rising prices often opposes a corresponding rise of wages. Everybody opposes the rise of anybody else's charges, because they have their minds set on a general reduction. As a general reduction is impossible it is better to level up the few prices which are too low relatively to the rest.

15. **Bad Remedies.** The public fails to understand the cause of price movements, but it sees who has made money out of them at the expense of others and seeks a remedy against these winners. Every remedy

offered gets a hearing. Some of these are bad. Such was "free silver" proposed in 1896 and such is much of the reckless radicalism of to-day.

16. **The Loss Is General.** Few gain permanently either from rising or falling prices, for the envious losers contrive in some way to balk them, *e.g.* by sabotage. Again when prices fall foreclosures are forced which throw the management of industry into hands often ill fitted for the task. In short, in the end, almost every one loses from an unstable dollar.

17. **Conclusion.** An unstable dollar is the unsuspected cause of many of the greatest events, including the greatest evils and injustices, which history records.

Chapter IV. A Remedy

1. **Remedies Which Have Been Proposed.** The 43 remedies proposed almost ignore the money side of the problem. They aim at economy and efficiency, and concern the problem of our incomes rather than that of the purchasing power of the dollar.

2. **The Dollar the Only Unit as Yet Unstandardized.** The dollar is now a unit of weight, not a unit of power to purchase goods, which is what we need. We have gradually stabilized or standardized every other unit used in commerce, including the yard, pound, bushel, horsepower, volt. Formerly these were as roughly defined as the dollar is now. The yard was once the girth of the chief.

3. **An Imaginary Goods-Dollar.** Two commodities like gold and silver make a better standard than one and many make a better standard than two. The dollar standard should be worth a specified bill of goods such as one board foot of lumber, fifteen pounds of coal,

half a pound of sugar, half an ounce of butter, a quarter of an ounce of leather, a quarter of a pound of steel, etc. Such an aggregate of goods, selected on the basis of their relative importance in trade, may be called a goods-dollar or a market-basket dollar.

4. **The Gold Standard Not to Be Abandoned.** Such a goods-dollar would be a good standard of value but a poor medium of exchange, being too heavy, bulky, perishable. It is proposed therefore to retain gold as a medium of exchange but to correct the gold dollar so as to make its value equal to that of the imaginary goods-dollar.

5. **Merely the Weight of the Gold Bullion Dollar to Be Varied.** The gold dollar is to be thus corrected by changing its weight. A Mexican dollar is only half as heavy as ours and so buys only half as much as it would if it were of the same weight.

6. **No Gold Coins to Be Used.** We have already changed the weight of our gold dollar twice. It would be easy to change it every month or so, and especially easy if we give up having *coined* gold. To-day gold circulates mostly by proxy — through paper certificates. It could do so entirely. The certificates are redeemable in gold bullion bars. The proposal is simply to change the rate at which these bars are exchangeable for certificates from the present fixed rate of 23.22 grains of pure gold for each dollar of certificates to a higher or lower rate from time to time.

7. **The Essentials of a Gold Standard** are a lake of gold with inflowing and outflowing streams. The inflow is from miners and importers who put their gold not directly into circulation but in the custody of the government, receiving certificates which serve

in circulation as the gold's proxies. The outflow is to jewelers and exporters who redeem certificates and withdraw the gold. These essentials would remain unchanged, but the terms for depositing and withdrawing gold would be changed.

8. **Periodical Variations of Weight Based on Index Numbers.** The changes in the dollar's weight would not be left to discretion but would obey the index number of prices. Every two months, say, this index number would be calculated representing what the imaginary basket of goods, called the goods-dollar, actually costs. If this basket costs 1%, or 1 cent, more than a dollar, 1% more gold is added to the dollar. If it costs 1% less than a dollar, the dollar is lightened 1%.

9. **How the Adjustment Rule Would Work.** It is not assumed that such corrections would necessarily be complete or final. But, if not, the next calculation of the index number would tell the tale and further correction would then occur. There would always be some deviation from par, but it would always be in process of correction, just as an automobile never remains in the exact direction desired but its deviation from the true path is being corrected as fast as it is made evident. Thus the gold dollar would keep close to the goods-dollar; every other dollar (the paper dollar and the deposit dollar) being redeemable, directly or indirectly, in the gold dollar, would be equivalent thereto.

10. **Proviso against Speculation at Expense of the Government.** The government would charge say 1% "brassage" for deposit of gold and no one change in the dollar's weight would exceed that brassage. This would prevent speculation in gold embarrassing to the Government. This proviso and other technical details are elaborated in Appendix I, § 1.

11. **Comparison with Other Plans.** Attempts to increase production are commendable, but neither these nor price fixing can greatly affect the price level. They require repressive force, while stabilizing the dollar would be effortless.

Chapter V. Conclusion

1. **Summary of the Plan.** Abolish gold coin, redeeming certificates in bullion only; establish an index number; adjust the dollar's weight by the deviation of this index number from par; charge a "brassage" fee and never at any one time alter the dollar's weight more than that; keep the gold standard system of unrestricted deposit and redemption and keep a sound banking system.

2. **The Crux of the Plan** is to keep the dollar from shrinking in value by making it grow in weight, or *vice versa*.

3. **Artificiality of a Fixed-Weight Dollar.** At present the weight of the dollar, and so the price of gold, is fixed. We cannot mark the price of gold up or down when its value goes up or down. The result is that the prices of other things rise when the price of gold ought to fall and *vice versa*.

4. **Transition Would Cause No Shock.** If the price level chosen as the par is near the level existing when the system starts, the ordinary man would never notice the change. The few, like miners and jewelers, who handle gold bullion would simply notice that the price of gold was no longer fixed.

5. **Contract-Keeping Would Cease to Be Virtual Pocket-Picking**, and the discontent, jealousy, and suspicion resulting therefrom would also cease; crises and depressions would be abated.

6. **Not a Cure-All.** It would not be a substitute for economy and efficiency nor would it insure a just distribution of wealth, but it would free these problems from their present entanglement and confusion with the problem of a stable dollar. It would accomplish more than any other single reform and more simply.

7. **No Claim to Theoretical Perfection.** It aims simply at a practical improvement of the dollar like the improvements already made in all other units.

8. **Why Has So Simple a Remedy Been Overlooked.** Among other reasons, because until recently the index number had not been devised. No unit can be standardized until it can be measured.

9. **What Is to Hinder.** Conservatism, indifference, ignorance.

10. **Precedents.** Contracts have been made in terms of other standards than current money.

11. **What Might Have Been.** If we had stabilized the dollar forty years ago, we should have escaped, during the first half of that period, the billions of loss with the bankruptcies of farmers and business men and ill-chosen changes of control, the crises of 1884 and 1893, much unemployment, populism, sectional ill-feeling, and the free silver agitation; while in the second half, we would have escaped the rising cost of living, the robbing through depreciation of savings, bonds, salaries, and wages, the food riots before the war and some of them since, some of the speculation and muckraking, much "profiteering," most of the I. W. W., many strikes, the injustice to railways and street railways.

12. **What Is in Store.** That depends on which way the dollar moves, which, in turn, depends on govern-

mental finance not only here but abroad. We may feel sure the dollar will not stop fluctuating unless we stop it and thereby settle in advance what, if neglected or long delayed, may prove to be a bitter controversy.

13. **Our After-War Opportunity** is to take the leadership in settling price levels disturbed by the war. If we do, the world will probably follow.

14. **If We Miss the Opportunity** to effect a scientific remedy for our unstable dollar, we pave the way for an unscientific remedy, for charlatanism, and a great selfish class struggle.

Appendix I. Technical Details

1. **The Reserve against Certificates.** To increase or decrease the weight of the gold dollar decreases or increases in the inverse ratio the number of dollars in a given physical gold reserve and would therefore disturb, in one direction or the other, the present 100% ratio of gold reserve to gold certificates. The ratio may be kept at 100% or any other fixed figure by canceling or issuing certificates for that purpose.

These operations would help stabilization, *i.e.* would require less change in the dollar's weight than would otherwise be necessary.

They also put an item of loss or gain on the Government's books which would otherwise belong to private individuals.

Another way to treat the reserve is merely to let the ratio of reserve to certificates alone unless or until the reserve should sink to a set minimum limit of safety, say 50%, after which it could be safeguarded in the manner above described.

Still another way is to apply such a limit at the out-

set, the Government then appropriating the surplus above this legal reserve as initial profit and afterward maintaining the fixed ratio in the manner described.

As long as the reserve is left to drift, the operation of the stabilization system would consist chiefly in affecting the export or import of gold. When the additional feature of withdrawing or issuing certificates is added, the operation of the system would consist chiefly in affecting the volume of these certificates within the country.

If the country or countries employing the system were a small part of the world, the changes required in the dollar's weight would not be appreciably different whether or not the feature of special withdrawal and issue of certificates to keep the reserve ratio definite is introduced or not. But if the countries employing the system included most of the world, the first, or indefinite reserve system, would require much more change in the dollar's weight to effect stabilization than would the second, or definite, reserve system.

2. **Speculation in Gold.** At present the Government, unlike a merchant, buys and sells gold at one and the same price. If this practice were continued after the stabilization system was adopted, the Government might be embarrassed whenever a prospective change in the price of gold became known by speculators. They might buy gold of the Government to-day at one price and sell it back to the Government to-morrow at a higher price or sell it to-day and buy it back to-morrow at a lower price. These operations can be avoided by inserting a Government commission fee, as it were ("brassage") of say 1% between the prices at which the Government buys and sells and

never, at any one time, shifting this pair of prices upward or downward by more than that fee.

Other forms of speculation would not do harm.

3. Selection of the Index Number. A weighted arithmetical index number for wholesale prices of commodities should be used. Wholesale prices are more prompt to indicate what change in the dollar's weight is needed than retail prices. The frequency of calculation should probably be about once every two months to afford full time for the lag between the previous adjustment and its effect.

4. Selection of the Par. This should be left to a judicial commission. Probably we should start off the system at a price level near that existing at the time.

5. What Shall Be Done with Existing Gold Coins. One answer is (while stopping any *further* coinage) to allow *existing* coins to continue in circulation unless or until their owners choose to exchange them for certificates or melt them into bullion (if gold should appreciate enough to render such melting profitable).

6. What Shall Be Done Concerning the "Gold Clause" in Existing Contracts. The best way to carry out its real purpose, which was stabilization, is to abrogate it. This the Federal Government has the constitutional power to do.

7. Bank Credit and the Plan. Bank reserves would be kept in gold bullion dollar certificates, the paper representatives of gold. The banks' own notes and deposits should, of course, be kept in some reasonable relation to their reserve. One means of accomplishing this is the adjustment of the rate of discount. This is the means used by the Bank of England.

8. International Aspects of the Plan. The plan does not require concerted action of nations, though concerted action would be desirable (to avoid the inconveniences of fluctuating ratios of exchange). The nations employing the plan would no longer have their monetary standards at the mercy of foreign politics or wars. International trade would not be greatly affected whether one or many nations adopted the plan. The great advantages, especially as to internal trade, enjoyed by any nation first adopting the plan would probably lead soon to its universal adoption.

9. Numerical Illustrations under Various Assumptions. Actual calculations show that it makes surprisingly little difference to the resulting stabilized index number what brassage charge, what frequency of adjustment, and what adjustment of the dollar's weight for each 1% deviation from par of the index number are decided on so long as these are kept within reasonable limits. Nor, with the same proviso, does it make much difference what may be the amount and promptness of the influence which a given adjustment is assumed to exert, nor what may be the tendency of the index number which the stabilization device is designed to overcome.

Thus, if stabilization had been started in 1900 with an adjustment every other month of 1% of the dollar's weight for every 1% of deviation from par of the index number and with a brassage charge of 1%, and if we assume that the influence on the index number is 1% for each 1% of adjustment, and that two thirds of this influence occurs before the next adjustment and the other third before the next following one —

conditions constituting a very severe test — we find that, up to the fall of 1915, when the European war first greatly affected our price level, the stabilization machinery, working as above assumed, would have kept the index number within 2% of par two thirds of the time, within 3% of par six sevenths of the time, and within 4% of par all of the time.

10. **A Tentative Draft of an Act to Stabilize the Dollar.** A dollar is defined as a variable quantity of standard gold bullion of approximately constant computed purchasing power.

A Computing Bureau is to compute every second month a weighted index number of wholesale prices of about 100 important commodities.

The result of this computation is to be transmitted to the Bureau of the Mint, which thereupon increases or decreases the dollar's weight in the ratio which the index number bears to par (but not by more than 1%, the brassage fee).

The Mint is to redeem gold bullion dollar certificates *ad libitum*, dollar for dollar, in gold bullion and likewise issue them for gold bullion deposited, dollar for dollar, but charging in addition 1% brassage.

The Secretary of the Treasury is to maintain the gold reserve against certificates at 50%. Any surplus above this 50% reserve requires an issue of certificates and any deficiency requires a cancellation of certificates.

Appendix II. Disapproval of the Plan

1. **Misunderstandings** are natural and numerous. They make up most of the supposed objections to the plan. (Figure 13.)

2. **Alleged Defects.** It is a weak objection that the plan is not perfect; we know our present system is much further from perfection.

3. **The Obstacle of Conservatism** is the only formidable one and it underlies most other objections alleged.

4. **The Obstacle of Special Interests** seems practically non-existent.

Appendix III. Alternative Plans

1. **A Sound Alternative** is to dispense with gold as an intermediary and to provide virtually for the free deposit and withdrawal of composite goods-dollars in exchange for the issue and redemption of certificates. These operations are made possible by means of a system of goods-warrants for each special kind of goods.

2. **The Same System Modified by the Omission of "Free Coinage"** (*i.e.* free deposit) could theoretically be worked.

3. **The Same System Modified by the Omission of Redemption** would be exposed to the risk of inflation.

4. **A Money Based on Labor** is conceivable but not desirable.

5. **Governmental Control of Gold Production** would help.

6. **The Tabular Standard** is practicable only in a limited way.

Appendix IV. Public Interest

1. **Either an Upheaval or a Collapse of Prices Weakens Confidence in Money** and arouses public curiosity as to the "reason why." Great wars usually

cause great price upheavals through inflation and so lead to discussion as to causes and cures.

The tendency, at such times, to suspect the stability of money encounters, however, the ingrained faith in that stability; so that after the price movement slows down the public soon relapses into its old childlike confidence that "a dollar is a dollar."

It is at the end of a long swing of prices that the public interest and openmindedness is at a maximum. This was true in 1896 after a prolonged fall of prices and it is probably about to be true to-day after a prolonged rise of prices.

2. **The Present Plan Grew Out of the Price Movement Beginning in 1896.** It was not till prices had been rising five or ten years after 1896 that the movement attracted attention. Then articles, books, and official reports on the High Cost of Living came in quick succession and increasing numbers. A project to hold an international conference on the subject was in progress when the Great War broke out. One of the special objects of this proposed conference was to study the rôle of money in the High Cost of Living.

3. **Approval of the Plan for Stabilizing the Dollar** has been expressed by economists, bankers, business men, and men in public life. Resolutions favoring it have been passed by chambers of commerce and other commercial bodies. Its actual adoption is now being considered in some countries.

Appendix V. Precedents

1. **Contracts in Terms of a Commodity**, such as wheat or steel, in preference to current money, have sometimes been drawn.

2. **The Tabular Standard.** Contracts in terms of a

composite or index number of goods have been drawn, notably in the colony of Massachusetts, to safeguard the pay of soldiers and, in the present war, to safeguard wages.

3. **Correcting the Money Unit Itself**, as in the "gold exchange standard," has been adopted to prevent fluctuations in international exchange. During the Great War prohibition of gold imports or exports was sometimes adopted, the purpose being, in part at least, to prevent undue inflation or contraction.

4. **Conclusion.** There is, thus, precedent for each of the elements of the proposal. The only innovation is combining these previously tested elements into one complete whole.

Appendix VI. Bibliography

1. **Some of the Chief Index Numbers Current** include six for the United States, two for Canada, four for Great Britain, one for France.

2. **Some of the Chief Writings on the Principles of Index Numbers** include those of Jevons, Edgeworth, Walsh, Knibbs, Fisher, and Mitchell.

3. **Remote Anticipations of the Plan to Stabilize the Dollar** include bimetallism, symmetallism, the gold exchange standard, paper money régimes, and the tabular standard.

4. **Direct Anticipations**, being substantially plans identical in concept with that of this book, have been made as early as 1824 by John Rooke, and during the last era of falling prices by Simon Newcomb, Alfred Marshall, Aneurin Williams, J. Allen Smith, and D. J. Tinnes as well as by several others mentioned in the Preface, who have not published their views.

5. **Recent Writings on Stabilizing the Dollar** are cited.

STABILIZING THE DOLLAR

CHAPTER I

THE FACTS

1. Index Numbers

This book aims to show how prices in general can be controlled.

A great teacher once said to his students: "Divide the study of any social situation into four questions: What is it? Why is it? What of it? What are you going to do about it?" Accordingly I shall take up, in successive chapters, (1) the actual *facts* to be explained; (2) the chief *causes* which explain them; (3) the resultant *evils* which make a remedy desirable; and (4) the *remedy*.

The present chapter is devoted to the first of these four topics — the facts, as shown by the recorded price movements of history.[1]

The prices of various articles do not usually move together but scatter or disperse like the fragments of a bursting shell. Yet there is always a definite average movement just as there is a definite path of the center of gravity of the shell-fragments.

In order to depict the average movement of prices we must first have some way to measure it. A very simple measure has been devised, called the "Index Number."

[1] The reader who wishes fuller details is referred to the bibliographies given in Appendix VI.

An index number is a number showing the average rise or fall of prices. Thus, if wheat has risen 4% since last month while beef has risen 10%, the average rise of wheat and beef is midway between 4% and 10%, or 7% (*i.e.* $\frac{4+10}{2}=7$). Then 107% is the "index number" for the prices of the two articles this month, on the basis of last month's prices taken as 100%. Or:

	LAST MONTH CALLED	THIS MONTH
wheat	100%	104%
beef	100%	110%
average	100%	107%

The same method applies, of course, to more than two prices. Thus, if three such prices rise respectively 4%, 4% and 10%, their average rise is $\frac{4+4+10}{3}$ or 6% and the "index number" is 106 as compared with the original price level of 100, taken as a base of comparison.

Such a calculation treats the commodities as equally important. If one commodity is more important than another, and we wish to be very particular, we may treat the more important commodity as the equivalent of two or three other commodities. Thus, suppose that wheat is twice as important as beef. If wheat rises 4% and beef 10% the average rise of the two together, instead of being $\frac{4+10}{2}=7$, as it would be if the commodities were regarded as equal, is $\frac{4+4+10}{3}=6$ just as though there were three commodities, thus making the index number 106 instead of 107. This

is known as a "weighted" average. If, reversely, beef is "weighted" twice as much as wheat, the average rise is $\frac{4+10+10}{3}=8$ and the index number is 108. It will be noted that there is remarkably little difference between the "weighted" averages on the one hand (106 and 108), and the "unweighted" average (107) on the other. Such is usually the case. Figure 1 illustrates this important fact. Nor does it generally make

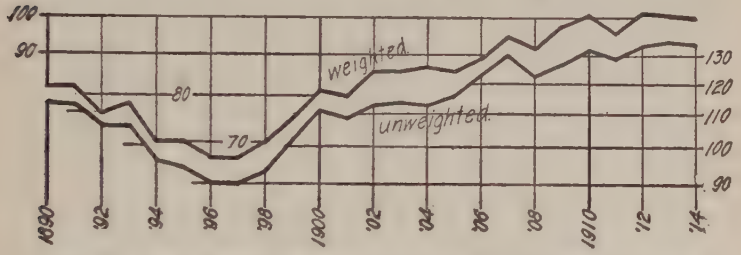


Fig. 1. Price Movements as Calculated by Different Methods (after Wesley Clair Mitchell)

Showing how very closely the "weighted" and "unweighted" methods of averaging agree with each other. That is, the percentage by which the level of wholesale prices in the United States has changed between any two dates is found to be about the same whether that percentage is calculated "unweighted," *i.e.* as a simple average of the percentages by which the various commodities have changed in price, all of them being treated alike, or "weighted," *i.e.* with careful regard to the relative importance of each commodity. Thus, between 1896 and 1914 the "weighted" index number rose from 67 to 100, and the "unweighted" from 90 to 133. The two rises are almost identical, $\frac{100}{67}$ being almost the same as $\frac{133}{90}$.

(The curves in this, and the other, diagrams in this book are plotted on the "ratio chart" in which the vertical scale is so arranged that the same slope always represents the same percentage rise.)

much difference whether very many or only a moderate number of commodities are included. Figure 2 illustrates this fact.

On the whole, the best form of index number is that expressing the price of a given bill of goods. If a defi-

nite assortment of goods cost $1.00 at one date and $1.10 at another date, these figures may be regarded as index

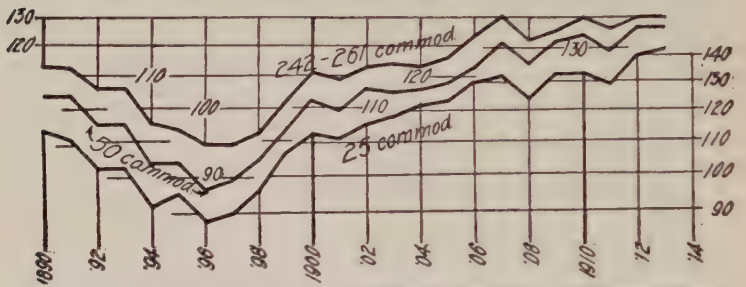


Fig. 2. Price Movements as Calculated by Using Different Numbers of Commodities (after Wesley Clair Mitchell)

Showing that the percentage rise or fall of the level of wholesale prices in the United States is very much the same whether many or few commodities are included in the calculations.

numbers. Thus the price from time to time of an imaginary market basket containing a representative collection of goods, *e.g.* one pound of meat, one pound of sugar, one pint of milk, etc., may be considered the index number and is so considered in Chapter IV.

Various systems of index numbers are now before the public, — such as those of Bradstreet, Dun, Gibson, the *Annalist*, the United States Bureau of Labor Statistics, the Canadian Department of Labour, the London *Economist*, the London *Statist*, and the British Board of Trade.

The present index number of the United States Bureau of Labor Statistics, as perfected by the present Chief of the Bureau, Dr. Royal Meeker, is made up from the wholesale prices of 300 commodities. It gives more weight to the more important commodities, as measured by the amounts marketed in the last census year. It expresses the price level of 1914 by the index

number 100 as compared with the price level of 1913 taken as 100. In other words it shows that, as between 1913 and 1914, prices averaged the same. The index number for 1917 was 176, and that for 1918, 196. That is, the prices in 1917 were, on the average, 76% higher than those of 1913, and in 1918, 96% higher, and consequently the prices of 1918 were, on the average, higher than those of 1917 in the ratio of 196 to 176.

Index numbers are a comparatively modern invention. Not many good ones have been calculated back of 1890, and still fewer back of 1860. Jevons, the English economist, who, more than any other man, was responsible for introducing the idea, computed an index number for England back to 1782. A few very rough index numbers have been computed back to the thirteenth century, and one, with some breaks, back even to the eighth century.

2. Medieval Price Levels

It is an interesting fact that, throughout the ages, while prices have sometimes fallen, they have generally risen. In France prices just before the war were four to six times as high as five hundred years ago and five to ten times as high as a thousand years ago.

We moderns are not the only ones to complain of the "high cost of living." In the sixteenth century people were complaining that wheat cost from three to ten times what it cost during the three preceding centuries. We are told that in 1447 £5 bought as much as £28 or £30 would buy in 1707. These fluctuations of prices are expressed in terms of metallic money. Where irredeemable paper money has been used, the

fluctuations have been far greater, as, for instance, in the case of the famous assignats of the French Revolution, and the "Continental" paper money of our own Revolution and the present paper money of Russia. After the American Revolution a barber in Philadelphia is said to have covered the walls of his shop with Continental paper money, calling it the cheapest wall paper he could get! Jokes were also heard of a housewife taking a market basket full of this "money" to the butcher's shop and bringing home the meat in her purse! This money became a hissing and a byword; and, even to this day, one of the favorite expressions for worthlessness is "not worth a Continental."

3. A Century and a Quarter of Price Movements before the Great War

But we have no really good measure of price movements before 1782, the date from which Jevons begins his system of index numbers for wholesale prices in England.

Between 1789 and 1809 Jevons' index number rose from 85 to 161. That is, in twenty years, according to Jevons, English prices practically doubled.

Between 1809 and 1849 Jevons' index number fell from 161 to 64. That is, in these forty years, according to Jevons' number, English prices were reduced by more than one half.

Between 1849 and 1873, English prices, as measured by Sauerbeck's index number, rose (with two interruptions) from 74 to 111.

Figure 3 exhibits these movements as well as those

for the United States. We note the great variability of the curves. Very seldom do they run horizontally. Occasionally, even in peace times, there is a variation of over 10% within a year.

Between 1873 and 1896, in countries using the gold standard, prices fell; while in countries using the silver standard, they rose. In the United States the fall was aggravated by the necessity of getting back from the paper standard of the Civil War to the gold standard. Prices fell from an index number of 100 in 1873 to 51 in 1896, when the cumulative downward movement resulted, politically, in the famous Bryan campaign.

But, by the irony of fate, scarcely had the country become excited over falling prices when the movement turned upward again; and, with few exceptions, it has

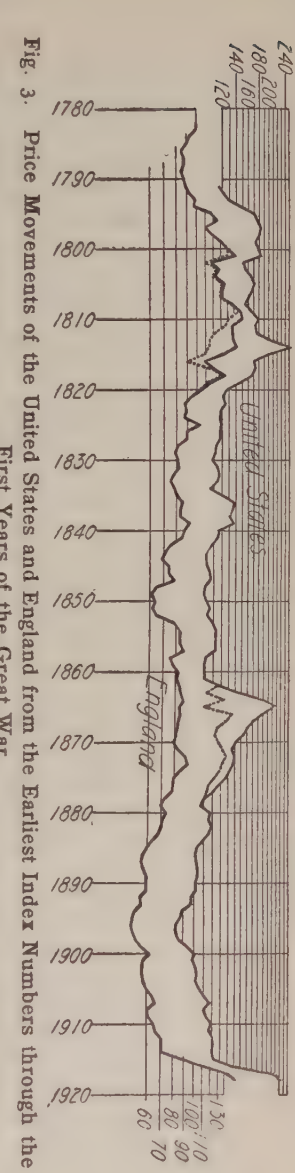


Fig. 3. Price Movements of the United States and England from the Earliest Index Numbers through the First Years of the Great War

Showing, in general, a close similarity. England was on a paper basis, 1801-20; and the United States, 1862-78. The dotted lines for those periods show the prices as translated back into gold.

been upward until to-day. Between 1896 and 1914 before the outbreak of war, the index number of the United States Bureau of Labor Statistics shows a rise of about 50%. Substantially the same rise occurred in Canada; while in the United Kingdom there was a rise of 35%.

4. Price Movements during the Great War

In the still further and more recent rise of prices the Great War has been the dominant factor. Its first effect was a speculative rise. Sudden and arbitrary speculative "mark-ups" of prices usually accompany war, and the mark-up in 1914, like most others, was temporary. It reached its maximum in the United States in September, 1914. As soon as it became clear that market conditions would not justify it (and this became clear after about a month) speculators were forced to reduce prices again and, until near the close of 1915, no great rise in prices occurred in the United States. From the close of 1915, however, the rise has been far more rapid than before. The rise of wholesale prices before the war, between 1896 and 1914, great as it was, amounted, in the aggregate, in the United States to only $\frac{1}{5}$ of 1% per month, and in England, to still less; whereas, during the war, the rise amounted to $1\frac{1}{2}$% per month in the United States, and to much more in many other countries — in Germany and Austria, to 3% per month, and in Russia, apparently, to 4% or 5% per month.

To these German and Russian rates there is no parallel among the records of index numbers which have been computed. If before the war we could become

excited over a continued average up-grade of $\frac{1}{5}$ of 1% per month, we may partially understand some of the Russian economic unrest with an uphill movement more than twenty times as steep and probably still steeper under Bolshevism.

As yet the evidence is not all in, but the index number of wholesale prices of our Bureau of Labor rose 106% between 1914 before the war and November, 1918, the month of the armistice, while the index number of the London *Statist* rose 122%.

Retail prices of food rose in the United States in the same period 79%, in England 133%, in France approximately 140%, etc. It is fair to say that the war doubled prices in the United States and Canada and more than trebled them in western Europe,[1] while in Russia it multiplied them by ten or twenty or more. The result is that the problem of the price level is, throughout the world, perhaps the greatest economic problem which the war has left.

The general level of prices in the United States is now almost threefold the level of 1896. Expressing the same fact in terms of the purchasing power of money, our dollar of to-day is worth only thirty-five cents of the money of 1896. In modern slang we may say almost literally, that, as compared with the biggest dollar we ever had, that of 1896, our present dollar "looks like thirty cents."

[1] From the fragmentary data available for Germany, it would seem that the official retail prices of food rose about two and one half-fold during the war and unofficial, *i.e.* illicit or "unter der Hand," prices rose about tenfold.

CHAPTER II

THE CAUSES

1. False Scents

We have answered the first of the four questions and have seen that the price level is always changing, that is, that the dollar is not a constant unit of purchasing power or value in exchange.

We are now ready for the second of the questions, *i.e.* "Why is it not constant?"

In recent popular discussions a great variety of reasons have been assigned for the "high cost of living," *e.g.*, "profiteering"; speculation; hoarding; the middleman; foreign demand; the war; labor unions; short hours of labor and limitation of output; trusts; patent monopolies; the tariff; cold storage; longer hauls on railroads; marketing by telephone; the free delivery system; the individual package; the enforcement of sanitary laws; the tuberculin testing of cattle; the destruction of tainted meat; sanitary milk; the elimination of renovated butter and of "rots" and "spots" in eggs; food adulteration; advertising; unscientific management; extravagance; higher standards of living; the increasing cost of government; the increasing cost of old-age pensions, and of better pauper institutions, hospitals, insane asylums, reformatories, jails and other public institutions; the increasing cost of insurance against accident and disease; the increas-

ing burden of unemployment and crime; investments in public undertakings, such as railways, public works, etc.; the growing cost of military establishments, both before and during the Great War; the destruction of wealth by war; the withdrawal of labor to war; the concentration of population in cities; the high price of land; private ownership of land and other natural resources; impoverishment of the soil; the displacement of the near-by farmer as the chief source of food supply; the fact that farmers' wives no longer compete with large establishments in butter making or poultry raising; drought; hoarding by housewives; daily purchases by housewives and their abandonment of home storage in attic, smokeroom, and cold cellar.

I shall not discuss in detail this list of alleged explanations. While some of them are important factors in raising particular prices, none of them except the war has been important in raising the *general* scale of prices, and the war, of course, only recently. If other causes seem to the reader to deserve special discussion beyond the brief summary which follows, I would refer him to my previous writings [1] and to the writings of others.

That none of the ingenious explanations enumerated go far to account for so general, or universal, a change of prices is fairly clear when we consider that the rise, before the war, applied to producers' prices as well as to consumers', to wholesalers' prices as well as to retailers', to prices of competitive goods as well as to

[1] See, in particular, *Why is the Dollar Shrinking?* Macmillan, 1914; and *The New Price Revolution*, Department of Labor, Information and Education Service, March, 1919.

those of trust-controlled and patented goods, to prices in free-trade countries as well as to those in countries having a protective tariff, to prices in countries without labor unions as well as to those in countries with them, to prices of necessities as well as to those of luxuries, to prices of unadvertised goods as well as to those of advertised goods, to prices in non-militaristic nations as well as to those in militaristic nations, to prices in the country as well as to those in the city, to prices where sanitary laws were absent as well as to those where they were present, to prices of bulk goods as well as to those of package goods.

I do not mean that the above suggested causes had *no* influence on prices. The prices in free-trade countries seem to rise (or fall) — or did before the war — somewhat less than in other countries; prices of proprietary breakfast cereals are far above the prices of the materials of which they are made; trade unions have added to costs in many industries; middlemen have sometimes combined to depress the prices of truck to farmers, while increasing the prices to consumers; trusts have sometimes raised prices above competitive levels, although they have sometimes reduced them and made their monopoly-profits by still further reducing costs through the economies of trust-organization [1]; and war-time prices rose more in countries near the seat of war than in those remote. But interesting and important as are these facts, they do not go far in helping us understand the cause of high prices.

[1] Prof. Meade (in *Journal of Political Economy*, April, 1912), shows by index numbers that trust-made products have been more stable and, on the whole, have been less inclined to rise than competitive products.

2. Profiteers, Speculators, and Middlemen

Much is said to-day of profiteering and of speculation in general. Speculation is always stimulated when prices are changing. It feeds on price movements. Thus when prices are expected to rise in the future, speculators buy goods and raise their prices in the present; and when, in the future, they sell their holdings, prices are kept *below* what they would otherwise have been. The normal effect of such, as of most, speculation is to reduce or "even-up" price fluctuations.

Occasionally speculation causes or aggravates fluctuations; but, in such cases, speculators usually come to grief as a consequence. This was true of the speculative rise in prices that occurred immediately at the outbreak of the war, in August, 1914, and was promptly followed by a fall. Speculators who thus try artificially to mark up prices when other causes are not about to produce a rise are like the comedian who said he could "command $1000 every night" but added, "the only trouble is it won't come!"

Similarly cold storage is a stabilizer of prices and, on the whole, has probably mitigated the rise of prices instead of aggravating it.[1] Equally far from the truth is the popular idea that the rise of prices is due to "the middleman." It is true that the processes of distribution are often wasteful, but probably they have, on the whole, been growing less wasteful rather than more wasteful. Index numbers show that the average margins between wholesale and retail prices have, on the whole, actually diminished during most of the rise in

[1] See Fabian Franklin, *Cost of Living*, p. 97.

prices since 1896, while they tended to increase when prices were falling before 1896. In other words, wholesale prices move faster, in either direction, than retail prices. Figure 4 illustrates this fact, and more

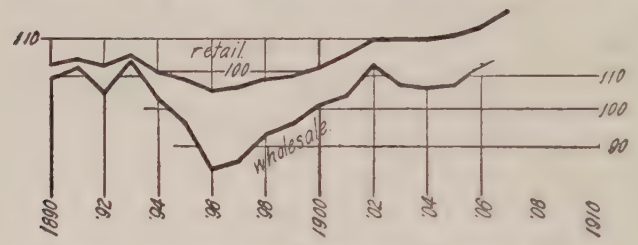


Fig. 4. Movements of Retail and Wholesale Prices (after Wesley Clair Mitchell)

Showing: (1) that the two roughly correspond; (2) that, in general, wholesale prices have moved faster (whether down or up) than retail prices; and therefore (3) that "middlemen's profits" will not explain the rise from 1896 to 1907.

recent figures of the U. S. Bureau of Labor Statistics confirm it.

The common idea that "profiteers" are responsible for rising prices is, as will be more clearly seen in Chapter III, a reversal of the truth. Rising prices are responsible for profiteering.

3. Circular Reasoning

Obviously no explanation of a general rise of prices is sufficient which merely explains one price in terms of another price. To say that the cause of rising "prices" is rising "wages" is merely to say that the prices of commodities have risen because the price of labor has risen; and we might as well turn it about and say that the price of labor has risen because the prices of commodities have risen and so driven workmen to

strike for higher wages. It is equally futile to say that finished products have risen because the raw materials have risen; or that the raw materials have risen because finished products have risen.

Such explanations are as unsatisfactory as the answer of the gardener who, when asked, "Where is the hoe?" replied, "It's with the rake," and when asked, "Where is the rake?" replied, "It's with the hoe." Such alleged explanations were shrewdly caricatured by the cartoon showing many persons standing in a circle, each accusing his neighbor: the consumer blaming the retailer; the retailer, the wholesaler; the wholesaler, the middleman; the middleman, the manufacturer; the manufacturer, the workman; the workman, the trust; while (to complete the circle) the trust blames the extravagant consumer.

It is true that individual prices do react on one another in thousands of ways. But the several pushes and pulls among individual prices are not what raises them *as a group*. Such forces within the group could not move the group itself any more than a man can raise himself from the ground by tugging at his bootstraps. We cannot explain the rise or fall of a raft on the ocean by observing how one log in the raft is linked to the others and is pulled up or down by them. It is true that some prices rise more promptly than others and give the *proximate* reason for raising the others. The whole raft of prices is bound together and its parts creak and groan to make the needed adjustments.[1] But such readjustments between prices do not explain why the whole raft of prices has risen.

[1] For further discussion of this point, see § 15 below and Chapter III, §§ 13 and 14.

4. The Error of Selecting Special Cases

Nor will special causes working on selected commodities prove to be general enough to explain the concerted behavior of commodities. While "scarcity," for instance, will go far toward explaining the rise of certain selected prices, it will not help explain changes in the *general* scale or level of prices, — at least not before the Great War.

Thus, even if, for reasons of scarcity, wheat should rise, let us say, 20%, nevertheless, so unimportant is wheat relatively to the great mass of commodities in commerce, that the index number for 300 commodities, computed by the United States Bureau of Labor Statistics, would be affected only 1%. So also potatoes would have to rise 100% to raise the index number by 1%. And even these negligible figures exaggerate the effect on the general price level, — for several reasons, which need not be discussed here.

The truth is, most explanations of the general rise in prices are mere graspings at the first straw in sight that seems to offer any explanation. People unconsciously pick out some particular cases with which they happen to be familiar and drag them before the public. A middleman or a trust raises prices, a firm announces a rise because of the demands of labor unions, a crop failure raises the price of a cereal, — and immediately some one hails the event as a representative cause of the high cost of living. The newspapers, with impressive headlines, feature the stories about such cases; and the more unusual and *un*representative the cases are, the more glaringly they are featured.

Only a *general* survey is of any real value, and such

a general survey, as we shall see, fails to confirm many, if any, of the numerous popular impressions which have gone abroad.

5. The Argument from Probability

All those who have offered such explanations make one fatal mistake. They look at the wrong side of the market. They seek the causes wholly in the goods, the prices of which have changed, and not at all in the gold dollar, in terms of which those prices are expressed.

Which of these — goods in general, or the dollar in particular — is the more *likely* to vary? Is it credible that commodities should rise and fall so concertedly without some simple common cause? Is it not more probable that the dollar, which, as such a common cause, affects all the commodities it buys, should fall in value than that hundreds of individual changes in the values of other commodities should all happen to occur in concert? Are not the coincidences involved a little too remarkable? It is one of the accepted maxims of logic that a complicated multiple explanation is not to be presumed if a simple single explanation can be assumed.

Mere chance almost never plays onesidedly. If we throw nine coins in the air, it will not surprise us if four or five of them come up heads, but it will surprise us greatly if all come up heads. The chance of such a coincidence is exactly 1 in 512. The chance that eight would come up heads is less than 1 in 50 (exactly 10 in 512).

Now, of the nine groups of commodities included in the index number of the United States Bureau of Labor

Statistics, only one group (house-furnishings) fell in price between 1896 and 1913, the year before the war. Assume that the nine groups, like the nine coins, are independent of one another, — for instance that "clothes and clothing," when they rise, do not prevent "drugs and chemicals" from falling; assume further that, for any one group among the nine, the chances of rise or fall are even; then the chances that eight out of the nine would rise coincidently would (as in the case of the coins) be exactly 10 in 512.

In actual fact the chances are less; for the assumption that a rise is as likely as a fall is not true of any ordinary commodity. A fall is really what we would, in most cases, expect because of improvements in methods of production. Taking this fact into consideration the chances that eight groups would rise coincidently are therefore *less* than 10 in 512 — doubtless less than 1 in 100.

Of the 243 commodities recorded under the nine groups only 27 fell in price. It is true, of course, that not all of the 243 commodities are independent. Many commodities like bread and flour, or pig iron and iron products, move necessarily in sympathy with one another; but, even so, we may, I believe, safely put the chance of such an accidental rise simultaneously in 216 commodities out of 243 at less than one in a thousand.

This all corresponds with common sense. We seldom have world-feasts or world-famines. If the corn crop is short in some places, it is usually abundant in other places. If it is short in all places, the crop of wheat or barley or some other staple food is practically certain to be at least normal. If there is

war in Japan, it is not likely that there will also be war in India. A world-war or even anything as near to a world-war as the recent conflict is a most — *the* most — unprecedented event in all history.

Our conclusion is that, so far as the argument from probability can help us, it is not likely that the simultaneous rises and falls of hundreds of commodities happen merely by coincidence. It is much more likely that there is one common cause or, at most, a very few common causes. We find two such common causes at hand, monetary depreciation and (since 1914) the war, which, as we shall see, has affected prices chiefly through monetary depreciation also. If these are not the common causes, what are they?

The same question arose concerning the general *fall* of prices between 1873 and 1896. Then there *was* another explanation besides the monetary one — the increased or cheaper production through invention. But while in the period from 1873 to 1896 this cause, cheaper production, worked with the trend, a *downward* price movement, from 1896 to 1913 it has worked against the trend. No common cause for the upward trend of prices between 1896 and 1913 — except money — has ever been suggested or seems likely to be.

6. The Argument from Statistics

So much for the mere probabilities of the case. But we have several other lines of evidence. First there is the evidence of direct statistics, which evidence points to the same conclusion. These statistics show that, up to the outbreak of the war in 1914, there was no pro-

gressive scarcity of goods *in general* but rather an increased abundance and that this increased abundance probably continued in the United States even during the war.

Professor W. I. King, in his *Wealth and Income of the People of the United States*, shows that "real income" (that is, income in terms of commodities instead of dollars) has risen every census year since 1850 (excepting only 1870, following the Civil War, when there was a slight diminution)![1] The volume of general trade in the United States has increased, on the average, faster than population. According to the statement of Nat. C. Murray of the Bureau of Statistics of the Department of Agriculture, the per capita production of the ten leading crops in the United States has increased during the last twenty years.[2] Professor E. W. Kemmerer[3] and the present writer[4] find that the volume of trade has increased greatly and continuously during that time.

This was true even during the war. Professor Wesley Clair Mitchell has made a study, under the War Trade Board, on the production of raw materials which indicates that the raw materials used in the

[1] King's figures (in terms of the average purchasing power of the dollar in the years 1890 99) for the successive census years from 1850 to 1910 are 69, 79, 82, 111, 169, 232, 262 (p. 129).

[2] Monthly Crop Reports, U. S. Department of Agriculture, November, 1917.

[3] "Inflation," *American Economic Review*, Vol. VIII, No. 2, June, 1918.

[4] "Will the Present Upward Trend of World Prices Continue?" *American Economic Review*, Sept., 1912; "Equation of Exchange," *American Economic Review*, June, 1919; "The New Price Revolution," Department of Labor, Information and Education Service, March, 1919.

United States in 1918 were 16% more than in 1913 and 2% more than in 1917. The physical volume of trade in 1918 is estimated variously by my own fragmentary studies, published and unpublished, and by the studies of others to be from 22% to 41% above that in 1913 and 8% above that in 1917.[1]

President Wilson, in his address to Congress, August 8, 1919, on the High Cost of Living gave other impressive examples as to foods, especially eggs, frozen fowls, creamery butter, salt beef, and canned corn, showing that there is no scarcity to account for high prices.

Aside from this argument as to the abundance of goods in belligerent countries, there is the additional

[1] The mistake has sometimes been made of thinking that the stream of goods absorbed by the war should be deducted from the total volume of trade and that only the remainder, used for civil consumption, should be considered for comparison with pre-war times. They say that this volume of goods was greatly reduced and so naturally bears a scarcity price.

But, granted that the scarcity of goods for civil consumption enhanced these goods, as estimated subjectively, it must not be overlooked that it tended just as much to enhance money, as estimated subjectively. There is no need therefore of any change in price.

Thus, suppose that, for whatever reason, the same price level were kept in the war as before it, but that the people were suffering from lack of food and clothing. These starving people might *subjectively* esteem bread and clothes ten times as highly as before, but, if they did, they would certainly esteem the money to buy these with also ten times as highly as before.

Professor J. S. Nicholson in his *War Finance* writes: "The late Robertson Smith used to say that in the East great famines were often accompanied by no particular rise in prices. The people died of hunger, but their demand was not effective. They had no more money than usual."

Prices do express the intensity of wants for goods, but only *relatively not absolutely.*

evidence of high prices in areas not directly affected by the war.

Mr. O. P. Austin, Statistician of the National City Bank, says:

"Raw silk, for example, for which the war made no special demand and which was produced on the side of the globe opposite that in which the hostilities were occurring, advanced from $3.00 per pound in the country of production in 1913 to $4.50 per pound in 1917, and over $6.00 per pound in the closing months of the war. Manila hemp, also produced on the opposite side of the globe and not a war requirement, advanced in the country of production from $180 per ton in 1915 to $437 per ton in 1918. Goat-skins from China, India, Mexico and South America advanced from 25 cents per pound in 1914 to over 50 cents per pound in 1918, and yet goat-skins were in no sense a special requirement of the war. Sisal grass produced in Yucatan advanced from $100 per ton in 1914 at the place of production to nearly $400 per ton in 1918, and Egyptian cotton, a high-priced product and thus not used for war purposes, jumped from 14 cents per pound in Egypt in 1914 to 35 cents per pound in 1918. Even the product of the diamond mines of South Africa advanced from 60 to 100 per cent in price per karat when compared with prices existing in the opening months of the war.

"The prices are in all cases those *in the markets of the country in which the articles were produced* and in most cases at points on the globe far distant from that in which the war was being waged. They are the product of countries having a plentiful supply of cheap labor and upon which there has been no demand for men for service in the war. The advance in the prices quoted is in no sense due to the high cost of ocean transportation, since they are those demanded and obtained in the markets of the country of production.

"Why is it that the product of the labor of women and children who care for silkworms in China and Japan, of the Filipino laborer who produces the Manila hemp, the Egyptian fellah who grows the high-grade cotton, the native workman in the diamond mines of South Africa, the Mexican peon in the sisal field of Yucatan, the Chinese coolie in the tin mines of Malaya, or the goat-herd on the

plains of China, India, Mexico or South America has doubled in price during the war period?" [1]

Lord D'Abernon found that in England those objects of luxury " which would seem to be influenced not at all or only very remotely and to a very small degree by increased cost of labor and materials," such as old books, prints and coins, had, nevertheless, advanced, roughly speaking, fifty per cent during the war.

There seems little doubt that the rise in prices during the war, even in Russia where scarcity of goods played a part, was, nevertheless, *chiefly* due to paper money depreciation; while in the United States, prices rose *before* America entered the war, not because of any general scarcity here, but because of gold depreciation brought about by huge imports of gold (a billion dollars) from Europe, in other words, gold " inflation." After we entered the war there has been added credit inflation.

7. Price Movements Vary with Monetary Systems

Thus far our argument has been one of elimination. We have excluded the probability of the commodity explanation for rising prices (except, to some extent, in war-time) and find ourselves almost forced to a monetary explanation.

But we have still more positive evidence of the great and constant influence of money and money substitutes on prices.

We find, in the first place, that countries having like monetary standards have like price movements. Thus

[1] "Prices, Yesterday, Today, and Tomorrow," address delivered before the Editorial Conference of the New York Business Publishers Association, April 11, 1919.

— to consider gold-standard countries — there is a remarkable family resemblance between the curves in Figure 3, tracing the index numbers of the United States and England. As long as the two countries were on or near a common gold basis, that is, in the entire period except when one or the other country was on a paper basis (because of the Napoleonic wars or the Civil War), English and American price movements have been strikingly parallel.

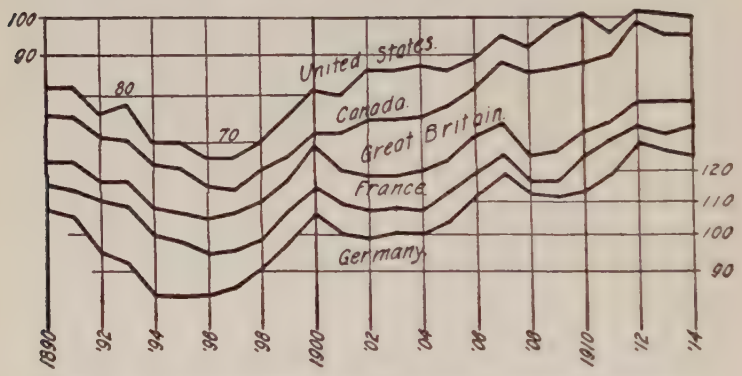


Fig. 5. Price Movements in Five Gold-Standard Countries

Showing how similar the ups and downs of prices have been. This similarity exists in spite of differences in methods of calculating the five index numbers.

For most other gold-standard countries the available statistics begin with 1890; and from that year until the outbreak of the war in 1914 there is a remarkable similarity among the price movements of these countries, namely, the United States, Canada, England, France, Germany, Austria, Italy, Switzerland, Russia, Sweden, Denmark, Holland, Belgium, and even, though less strikingly, far-away Australia, New Zealand, Japan, and India.

The chief of these statistics are given in Figure 5. It is surprising how little any one gold-standard country departs from the average of all.[1]

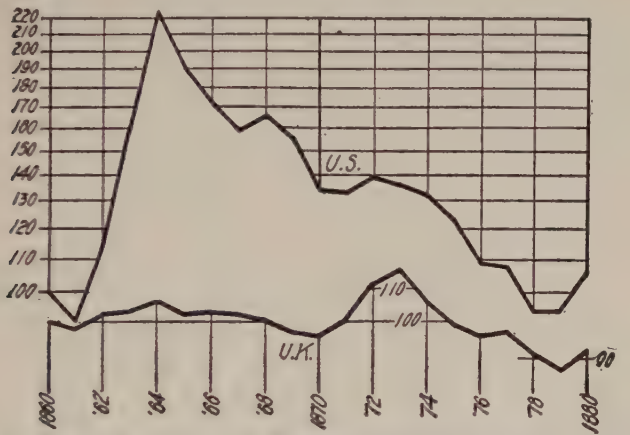


Fig. 6. Price Movements in the United States under the "Greenback" Standard and in the United Kingdom under the Gold Standard

Affording an instance of differing price movements under differing monetary standards.

Again, countries which have the silver standard in common also have price movements in unison as, for instance, India and China from 1873 to 1893.

We find, in the second place, that countries of unlike monetary standards have unlike price movements. Thus we find a great contrast between the gold and silver countries as soon as gold and silver themselves separated. Speaking roughly, we may say that, be-

[1] A still greater agreement would be found if the statistics in the different countries were constructed by the same methods. Professor Wesley Clair Mitchell has shown this by reconstructing the statistics, in this way, in certain selected cases.

tween 1873 when gold and silver broke apart, and 1896, the price level in gold countries fell 25% and in silver countries rose 30%.

Again countries with exceptional monetary standards show exceptional price movements. When, during a paper money régime such as during the Civil War in the United States or the Napoleonic wars in England, the curve tracing an index number in terms of paper is compared with that in terms of gold, the former looks like a great blister upon the latter. Figure 6 illustrates this fact.

So also when a country shifts over from a gold to a silver standard and from a silver to a gold standard, as did India, its price movements shift likewise. Figure 7 illustrates this.

In the third place, not only do the price levels of various countries having different monetary standards differ from one another, but the *degrees* of difference correspond to the *degrees* of difference in their standards, that is, the variations in prices of goods correspond with the variations in the values of the two metals as measured each in terms of the other.

For instance, the divergence between prices of goods in gold countries and in silver countries corresponds roughly to the divergence between the prices of gold and silver. Thus, between 1873 and 1893 the price of silver in London fell 40%, while the price level of commodities in gold countries relatively to prices in silver countries fell about 40%.

Similarly, prices in the United States in the greenback days of the '60s and '70s, as compared with prices in gold countries, such as England and Germany, shifted, in a general way, with the premium

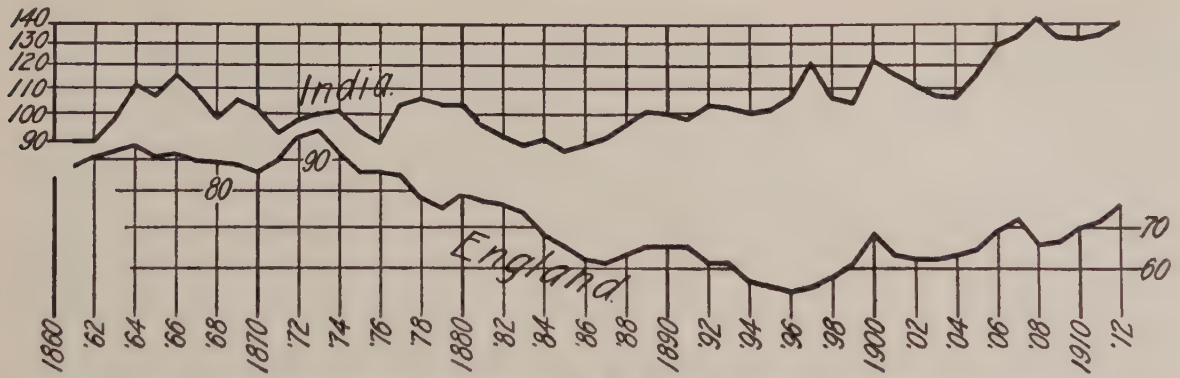


Fig. 7. Price Movements in England and India under Different Monetary Standards

The curves should be compared for three distinct periods: (1) 1861-1873, during which the English gold standard and the Indian silver standard were, to some extent, tied together (through bimetallism); (2) 1874-1893, during which there was no tie between the monetary standards of England and India; and (3) 1894-1912, during which the Indian rupee was again tied to the English pound (through the gold exchange standard).

It will be noted that, in the first and last of these three periods, there is some similarity between English and Indian price movements, but that in the middle period there is little similarity.

The chief exceptions to the above statements are the early years of the middle period (1874-1876) and the early years of the third period (1894-1899). In the former the two curves show similarity instead of the dissimilarity usual in the middle period; and in the latter the two curves show dissimilarity instead of the similarity usual in the third period.

It is interesting to observe that both exceptions are largely explainable — the former by the fact that, although bimetallic laws were abandoned in 1873, the ratio between gold and silver did not change greatly until three to five years later; and the latter by the fact that, although the gold exchange standard (legally fixing the Indian rupee at 16*d.* in English money) was adopted in 1893, nevertheless (because of existing hoards of coined silver and the continued coinage by Indian potentates, etc.) it did not succeed in actually controlling Indian exchange until five years later.

on gold in terms of greenbacks, and with the New York rate of exchange on London. This is shown in Figure 8.

For the period of the recent war the data are so meager that it is impossible to express the exact re-

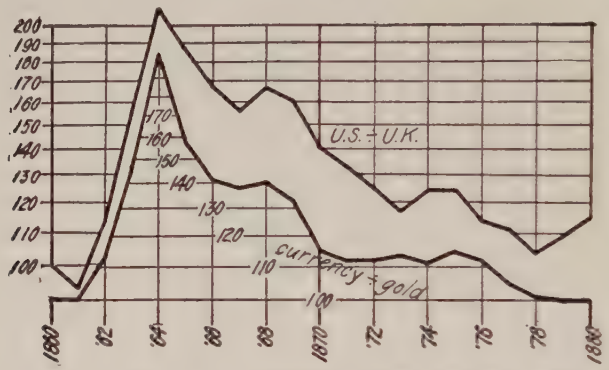


Fig. 8. The Ratio of the American to the English Price Level Compared with the Ratio of American to English Money

Showing a fairly close similarity and throwing light on the contrasts of Figure 6. Thus, when, during 1861-1864, the currency, or greenbacks, which would buy a unit of gold rose rapidly (as shown by the lower curve), American prices in greenbacks also rose rapidly relatively to English prices in gold (as shown by the upper curve); and when, during 1864-1878, the former ratio fell, the latter ratio fell also.

lations in figures, but we can arrange the different countries in the approximate order in which their prices rose. As a result, we find that the order of the nations corresponds in general with the order in which the currency in these nations has been inflated by paper as well as with the order in which their monetary units have depreciated in the foreign exchange markets. This order — of ascending prices and roughly of expanding currency during the war — is: Australia, India, New Zealand, United States, Canada, Denmark,

Holland, England, Switzerland, Italy, France, Norway, Sweden, Germany, Austria, Russia.

8. Price Movements Vary with the Money Supply

The ups and downs of prices roughly correspond with the ups and downs of the money supply. Throughout all history this has been so. For this general broad fact the evidence is sufficient even where we lack the index numbers by which to make accurate measurements. Whenever there have been rapid outpourings from mines, following discoveries of the precious metals used for money, prices have risen with corresponding rapidity. This was observed in the sixteenth century, after great quantities of the precious metals had been brought to Europe from the New World; and again in the nineteenth century, after the Californian and Australian gold mining of the fifties; and, still again, in the same century after the South African, Alaskan, and Cripple Creek mining of the nineties. Likewise when other causes than mining, such as paper money issues, produce violent changes in the quantity or quality of money, violent changes in the price level usually follow.

The war has furnished important examples of these points. In the United States the curve for the quantity of money in circulation, and the curve for the index number of prices run roughly parallel, the price-curve seeming to follow the money-curve after a lag of one to three months. It was in August, 1915, that the quantity of money in the United States began its rapid war-made increase. One month later, prices began to shoot upward. In February, 1916, money

suddenly stopped increasing, and about two months later prices stopped likewise. Similar striking correspondences have continued to occur. Figure 9 shows these.

The same sort of correspondence (with a probable three months' lag) has been found by Nicholson [1] for England and (by inference, at least) by Cassell [2] for Russia.

9. Kinds of Inflation

It is well known that a great increase, *i.e.*, "inflation," of paper money raises prices. But there are two other forms of inflation which do so also, gold inflation and credit inflation.

War finance is the prolific source of inflation. The war has exemplified this in all three forms. Russia indulged in the simple crass inflation of paying Government bills by printing irredeemable paper. Before the Bolshevist régime the Russian Government printing presses turned out, according to reports, a million roubles an hour, day in and day out, for over a year at a stretch. Under Bolshevism the output has been even greater, a total of eighty billion dollars in nominal value having been issued, which is more than the money of all the rest of the world put together. It is reported also, on apparently good authority, that, under the Bolshevist régime, the Russian Bureau of Printing and Engraving has issued counterfeit Spanish paper money and used it in Spain for Bolshevist propaganda.

The Bolshevist Government, in this case, swindles

[1] J. Shield Nicholson, *War Finance*, p. 100.

[2] Gustav Cassel, "Present Situation of the Foreign Exchange," *Economic Journal*, March and September, 1916.

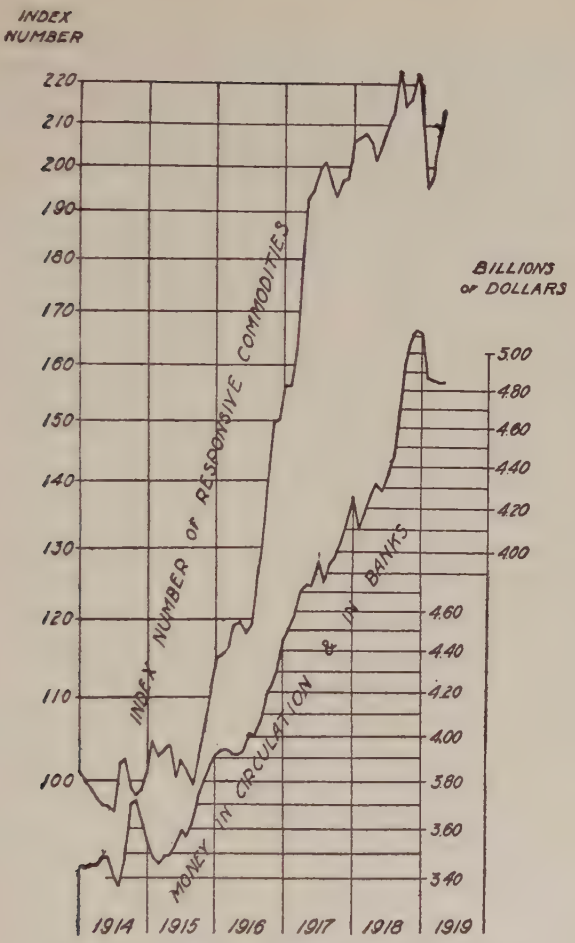


Fig. 9. Money and the Price Level

Showing a correspondence between the quantity of money and the level of prices. Since the middle of 1915, when the quantity of money in the United States began to be greatly affected by the war, the correspondence has been close, changes in the price level seeming usually to follow changes in the quantity of money one to three months later. (The apparent discrepancy between the upper and lower figures at the right is due to a change in the official method of computation adopted by the Federal Reserve Board.)

the Spanish people and, through the high cost of living, makes them pay for Bolshevist propaganda! This is a specially interesting case and illustrates the close similarity between counterfeiting and inflation, either of which mulcts the public.

Germany allowed the people, when a new loan was asked, to deposit the bonds of the previous loans at certain banks which were authorized to issue paper money to the depositor who then lent this paper money to the Government. In the United States also, Liberty Bonds were to some extent used as collateral at banks which, in turn, deposited them with Federal Reserve Banks and received their notes.

During the war the neutral countries were flooded with gold. This gold did not add to real wealth. When, directly or indirectly, it found its way into the hands of an American munition maker, food producer, or other seller of goods, it acted simply as a requisition for goods by one American on another American. It was merely a yellow token, like a brass check, redeemable in our own goods. Such an increase in the number of such tokens, or counters, could only cause them to depreciate.

War finance brought us still another, the most modern, kind of inflation, due not to the increase of money proper but to the increased volume of bank deposits subject to check. Banks sometimes subscribed to Liberty Loans simply by writing deposits on their books to the credit of the Government, and individuals often lent to the Government by borrowing of the banks, the sums so borrowed being likewise created by the banks as deposits on their books. Deposits subject to check have increased greatly, and until the

loans which gave them birth are paid off, these deposits stay in circulation like money, being transferred by check from the original bank customer to the Government (as his subscription to bonds); then from the Government to munition makers, etc.; then from them to steel producers, and so on, indefinitely.

Even gold inflation became transformed into credit inflation because the gold was used as bank reserves, the basis of bank deposits. During the war the people of all gold-using belligerents were asked to turn over their gold to the banks to become bank reserves. Thus gold was "mined out of the people's pockets" and intrusted to the banks where it had a multiplied effect; for every dollar of reserve can support several dollars of deposits.

It was failure of individuals to *save* the funds loaned to the Government which chiefly inflated deposits; they lent by borrowing. A Committee of the American Economic Association appointed to study the problem of the purchasing power of money in war-time reported: "The public should understand that lending by borrowing, though much better than nothing, is still a very unsatisfactory way to help the Government. By raising prices, such a procedure tends to shift the cost of the war to the poor who pay it in a higher cost of living."

In England it was found (as might have been expected) that the introduction of "continuous borrowing," advocated by Mr. Drummond Fraser,[1] which absorbed savings as rapidly as they could be made, and before they had a chance to be dissipated in per-

[1] See Professor H. S. Foxwell, *Papers on Current Finance*, London (Macmillan), 1919, pp. 241-244.

sonal gratification, immediately reduced deposits or credit inflation.

In all cases where the amount subscribed is not saved, the Government creates or secures purchasing power without creating any equivalent goods to purchase. It either creates the purchasing power out of whole cloth, as in Russia, or authorizes banks to create it out of whole cloth, as in Germany, England, and, to a less extent, the United States. All of these methods of war finance, like the greenback method in the Civil War and the Continental paper money method of the Revolution, may be defended on the plea of military necessity, but they are inflation none the less, even when gold redemption has been nominally [1] maintained, and they therefore tend to add to the cost of living. As Dr. A. C. Miller of the Federal Reserve Board has said, "Inflation is no less inflation when gilded with gold."

10. Extent of War Inflation

On the whole, the money in circulation in the United States rose from three and one third billions in 1913 to five and a half billions in 1918, and bank deposits from thirteen to twenty-five billions, both approximately corresponding to the rise in prices.

Taking a world-wide view, the money in circulation in the world outside of Russia increased during the war from fifteen billions to forty-five billions and the bank deposits in fifteen principal countries from twenty-seven billions to seventy-five billions. That is, both money and deposits have trebled; and prices, on the average, have perhaps trebled also.

[1] See Appendix IV, § 1.

The increase of over thirty billions in the money of the world (outside of Russia) is, as Austin says, " more *in its face value*, than all the gold and all the silver turned out by all the mines of all the world in 427 years since the discovery of America."

It is a common impression that wars always raise prices. But a study of index numbers in the belligerent countries, during the Napoleonic wars, War of 1812, Mexican, Crimean, Civil, Franco-Prussian, Spanish-American, Boer, Russo-Japanese wars and the World War indicates that war seldom raises prices except when, and to the extent that, the costliness of the war forces recourse to inflation as a fiscal expedient of governments or their people.

The conclusion toward which the foregoing arguments (and others which might be added) lead is that, in the past, the chief disturber of the peace, so far as the purchasing power of money is concerned, has invariably, or at any rate almost invariably, been money itself, not the goods which money purchases.

11. Money Illusions

The attraction which inflation policies have for so many people grows, in part at least, out of what may be called the *money illusions*.

The general public finds it hard to admit that there can be too much money. Money, however abundant, always *seems* scarce.[1] Each individual wants all the

[1] Cf. Bullock's *Monetary History of the United States*, N. Y. (Macmillan), 1900, p. 38; see also Irving Fisher, "The 'Scarcity' of Gold," *Cotton and Finance*, New York City, February 15, 1913. The recent attempts of the gold-mining interests in England and the United States to secure a Government subsidy utilized this illusion.

money he can get and naturally reasons that a country, like an individual, cannot have too much. If the reasoning were sound, it would justify counterfeiting. Counterfeiting does enrich the counterfeiter — but at the expense, of course, of others, even if the counterfeit is never detected. Inflation might almost be called legal counterfeiting.

After a rapid inflation once starts, the clamor for more money often grows louder and louder, just as when a dipsomaniac once gets under the influence of liquor he calls for more and more of that deceptive agent.

Of all the illusions which cluster about money, the one which most interests us here is the illusion that money is always fixed in value, that "a dollar is a dollar." If this were really true, the present book would not have been written. That so many people assume it to be true is the reason there is so little demand for a change. For why try to stabilize what is already supposed to be stable?

Money is so much an accepted convenience in practice that it has become a great stumbling block in theory. Since we talk always in terms of money and live in a money atmosphere, as it were, we become as unconscious of it as we do of the air we breathe.

To shake ourselves free of these illusions it would help greatly if, for the phrase "a general rise in prices," we should substitute the phrase, "a fall in the purchasing power of the dollar." Our attention would then be focused on the money, which is the chief controller and disturber of prices.

Even many well informed people bolster up the illusion that the dollar is a stable standard of value

by reference to the fact that "the price of gold" never changes. Only recently a former Government officer asserted that the value of gold is evidently constant because its price is fixed!

I once asked a dentist if the "high cost of living" had affected the price of his materials.

"Yes, of course," he replied.

"Of the gold you buy for fillings?" I ventured jokingly, expecting him to know that this could not be.

To my surprise, he answered, "I suppose so," and sent his assistant to look the matter up.

She returned presently and solemnly informed us that the price he was paying for his gold was substantially the same as it always had been.

"Isn't that surprising!" he exclaimed, "gold must be a very stable commodity."

"It's just as surprising," I replied, "as that the price of a quart of milk is always two pints of milk."

"I don't see the point."

"Well, what is a dollar?" I asked.

"I don't know, — what *is* it?"

That question is vital. The almost universal ignorance of the answer is chiefly responsible for the almost universal misunderstanding of the high cost of living and the ups and downs of the dollar's worth!

A dollar is defined by statute as 25.8 grains of "standard" gold (that is, of gold of which 900 parts out of 1000 are pure gold). Consequently the actual pure gold in a dollar is $\frac{9}{10}$ of 25.8 grains or 23.22 grains. Since an ounce is 480 grains, the number of dollars in an ounce of pure gold is $\frac{480}{23.22}$ or $20\frac{67}{100}$ dollars. In other words, any lump of gold containing one hundred

ounces, taken by a gold miner to the Mint, can be cut up and coined into 2067 dollars and handed back to him. Thus, fixing the pure gold in the dollar at 23.22 grains necessarily fixes the price of pure gold at $20.67 an ounce. Naturally, then, the miner gets $20.67 an ounce and this "price" can never vary so long as the weight of the dollar does not vary. In short we may say, omitting fractions, that gold is always worth twenty dollars an ounce simply because a dollar *is* a twentieth of an ounce of gold, just as a quart of milk is always worth two pints of milk because a pint *is* half a quart. Gold is thus stable merely in terms of itself.

But, of course, the fixity of the dollar's weight (and therefore of the price of gold in terms of gold itself) does not fix its value in exchange for other commodities. It does not exempt gold from the effects of supply and demand. The value of the dollar, in the sense of its general purchasing power, is *not* stable but fluctuates with supply and demand as does the value in exchange, or purchasing power, of anything else. There is only this difference: since a descending value of gold cannot lower the price of gold it must raise the prices of other things in terms of gold; and since an ascending value of gold cannot raise the price of gold, it lowers the prices of other things in terms of gold.

Thus the supply and demand of gold (and of its paper and credit substitutes which also affect its value) cannot be thwarted. Since we deny to such supply and demand the normal outlet of raising or lowering the price of gold, they take their revenge, so to speak, by lowering or raising the prices of other things.

If, instead of gold, we were to make milk the standard, or eggs, — that is, if we used these to purchase all other things, — they would acquire the same fixity of price — that is, price in terms of milk or eggs; and we would then fall victims to the same illusion of inherent fixity. If a dollar, instead of being 23.22 grains of gold, were, let us say, a dozen eggs, obviously the price of eggs would always be a dollar a dozen simply because a dollar *is* a dozen eggs. If the hens did not lay, the price of eggs would not rise (or vary at all) but, instead, the prices of other commodities in terms of eggs would fall; while, if eggs were a drug on the market, their price would not fall (or vary at all) but the prices of other commodities, in terms of eggs, would rise — and the mystified public would then be inquiring gravely "why this high cost of living?" The world's prices would then be at the mercy of hens just as now they are at the mercy of mines, as well as of banks and of governmental and private financiering.

In colonial days, in Virginia, tobacco was money. In those days a high price of wheat might have been attributed to scarcity of wheat when really due to abundance of tobacco, just as to-day we attribute the high prices of most things to a supposed scarcity of these things when it is really due to abundance of money.

12. The Instability of the Gold Standard as Compared with an Egg Standard and Others

In order to see what the purchasing power of a dollar is from time to time we need merely to invert the index number showing the general level of prices;

for if this level doubles, the purchasing power of the dollar is halved, and *vice versa*.

Figure 10 shows both. The upper curve shows the variations in the price level and the lower curve

Fig. 10. The Level of Prices of Commodities in Terms of Gold (Upper Curve) Contrasted with Its Reciprocal, the Purchasing Power of the Dollar in Terms of Commodities (Lower Curve) and with the Price of Gold (Middle Horizontal Line)

Since many commodities constitute a better standard of value than one commodity, the apparent fall and rise of commodities (upper curve) really means a rise and fall in gold (lower curve), while the mere constancy of the price of gold in terms of itself is shown by the middle (horizontal) line. The lower curve is the important one and, with others, is shown in the next diagram, Fig. 11.

shows the opposite variations in the purchasing power of the dollar. That is, the upper curve shows the changes of commodities expressed in terms of gold dollars and the lower curve shows the changes in the gold dollar expressed in terms of commodities; while the middle and horizontal line shows the constancy of the price of gold in terms of gold.

As the lower curve in Figure 10 shows, the purchasing power of the dollar over other things in general has fluctuated widely. If the war period were added,

the fluctuations would be even more violent (as may be seen from Figure 3).

If we compare this lower curve of Figure 10 with similar curves calculated for other commodities, we may see whether gold is really any better standard than any one of these other commodities.

Figure 11 gives this comparison. In it I have plotted not only the purchasing power of gold, but also the purchasing power [1] of pig iron, pig lead, cotton, silver, eggs, wheat, carpets, and brick. We see that, in terms of general purchasing power, gold is no more stable than eggs and considerably less stable than carpets!

It will also be of interest to see the relative stability of gold and the other articles *combined.* To paraphrase an old adage we may say that "in union there is stability." The curve representing the combined eight articles, pig iron, pig lead, copper, silver, eggs, wheat, carpets, and brick (which were originally selected at random, *i.e.* as representative articles and without thought of being combined), is also shown in Figure 11.

13. Seeing Ourselves as Others See Us

It will help emancipate us from the money illusions if we look at a foreign country instead of at our own. When, between 1871 and 1896, the price of silver in London went down, we readily ascribed the resultant rise of prices in India — a silver-standard country — to the "depreciation of silver." But the Indian

[1] The figures for these curves were easily found by dividing the index number for any commodity, pig iron, for instance, by the index number for commodities in general.

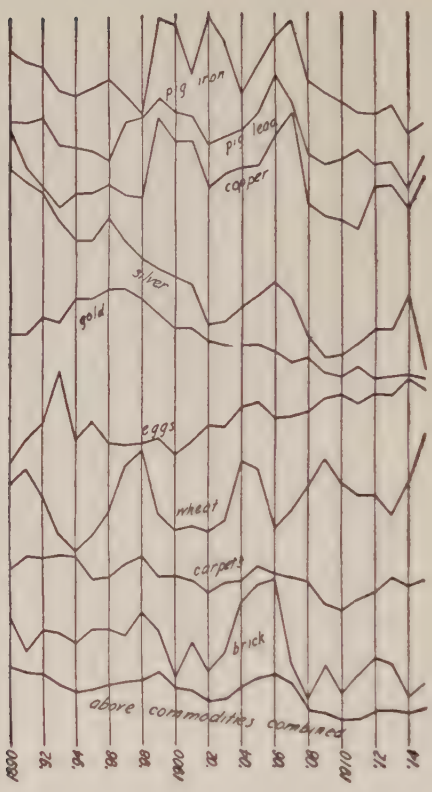


Fig. 11. The Relative Stability of Certain Commodities Each Measured in Terms of Commodities in General

The curve for gold is the same as the lower curve of Fig. 10. It shows the rise and fall of a unit of gold as measured by its purchasing power over commodities in general. The curve for silver shows likewise the changes in the purchasing power of a unit of silver. The other curves show the purchasing power of pig iron, pig lead, copper, eggs, wheat, Brussels carpets, and brick.

It will be observed that gold, as a standard of general purchasing power, has been more stable than silver but less stable than eggs or carpets, which last proves to be the most stable standard of purchasing power during this period. As to wheat, its power to purchase commodities has fluctuated widely but has shown a general horizontal trend.

merchant, from his point of view, saw only a rise in the price of gold, and readily ascribed the fall of American prices to the " appreciation of gold."

Sir David Barbour [1] tells the following illuminating incident: " The late General Keatings, V. C., informed me that when he was Commissioner in Assam he had an interview with an Indian merchant and mentioned to him how serious the fall in the value of the rupee was. The merchant was surprised and said he heard from his agents in Calcutta every week and none of them had said anything about the fall in the value of the rupee. After a pause he added: ' But they mentioned the rise in the price of gold, and perhaps that may be what you are thinking of.' "

Both the Englishman and the Hindu assumed his own money fixed, as a matter of course. Each could see the aberration of the other's money but was blind to that of his own. The Hindu thought gold had gone up because he measured gold by silver, and the Englishman thought silver had gone down because he measured silver by gold. Each was nearer right about the other's country than about his own! Yet neither was as nearly right as he would have been if he had gauged the values of gold and silver alike in terms of other commodities. It is reasonable to assume that the general mass of commodities is stabler than the single commodity, silver, or the single commodity, gold.

This illusion, that our own money is immovable while everything else moves, is like the illusion we often experience when the railway train in which we are sitting passes another train standing on a switch,

[1] *The Standard of Value*, London (Macmillan), 1912, p. 20, n.

or like the illusion that the sun rises and sets instead of the earth revolving.

Thus we have been deceived by appearances in commerce just as we have been deceived by appearances in astronomy. The earth seems to be fixed and all the other heavenly bodies seem to move. It is true, of course, that these bodies do move; yet most of the motion which we are tempted to attribute to them is not theirs but the earth's. So money seems to be fixed and all the other commodities seem to move. And it is true that these commodities do move; yet most of the motion we are tempted to attribute to them is not of them but of money.

It took a long time to overcome the apparent evidence of our senses in regard to the actual rising and setting of the sun, moon, and stars. In fact, the first astronomers did not doubt this popular view but accepted it and succeeded, by numerous special and complicated assumptions (of "cycles" and "epicycles"), in explaining all observed movements, even those of the planets. This was the system of Ptolemy; and one of the greatest revolutions in human thought was the adoption of the later astronomical system of Copernicus. This revolution of thought in astronomy was based chiefly on the presumption that a simple explanation is more likely to be correct than a complicated one.

Sooner or later a similar revolution will be wrought in popular economics and we shall come to see that the course of prices is due chiefly to the movement of money and not to coincident movements of all or almost all other commodities at once. We now think only of the gold-value of goods; we shall then think also of the goods-value of gold.

14. A Visit of Santa Claus

Many people, after being forced to admit that an abundance or scarcity of money does, in some way, raise or lower the prices of other things, still remain somewhat mystified because they cannot trace the intermediate process by which money operates on the price of a given article. "*How*," they ask, "does the import of gold (or the issue of paper money or the creation of bank deposits) really affect the price my grocer charges me for butter? He has probably never even heard of this new gold (or paper or bank credit), much less seen it."

The answer is that more money in tills and pockets means more lavish spending, *i.e.* a greater demand for goods, without any greater supply.

To make the picture vivid, let us imagine a financial Santa Claus. Let us suppose that, before his visit, the average per capita amount of money in actual "circulation" in the United States, that is, all money except that of the United States Treasury, is about $40. On Christmas Day Santa Claus doubles this amount. Each individual person, firm, and bank suddenly has on hand twice as much as before.

Now, while the amount carried by any one individual necessarily fluctuates because of his expenditures and receipts, in a large group of people the average amount carried usually fluctuates but little. If, then, an addition to the total circulation is suddenly made so large as to put forty extra dollars per capita in the pockets of the people, the first thought of most people will be how to expend this extra sum instead of merely keeping it idle in their pockets. If they should be

inclined to hoard it in stockings or safes or bury it in the earth or drop it into the sea, it would have no tendency to raise prices. Instead, however, they will seek to make some use of it either by expending it for goods or by depositing it in banks. In one or both of these two ways the surprised recipient of Santa Claus' bounty will, in most cases, have disposed of his surplus a few days after the supposed visit of Santa Claus. Let us assume that half is disposed of by expending and half by depositing.

The part expended will evidently tend to raise prices; for the sudden expenditure of $20 per capita will mean a spectacular rush upon the shops. Suppose, as is probably about the truth, that the average individual expended or turned over his per capita $40 in about two weeks. This is about three dollars a day, or $300,000,000 a day for the entire country. If within five days from his Christmas present the average person should expend half of the additional $40, *i.e.* $20, the result would be $4 additional per day per capita, or $400,000,000 per day for the nation, or more than the entire original daily expenditure of money. Such a sudden briskness in trade would astonish the shopkeepers and lead them promptly to raise their prices; otherwise, in many cases, their stocks of goods would be entirely depleted in a few days.

At first sight, it might seem that it would, according to this supposition, only require five days for every one to get rid of his extra money, so that the flurry in prices would be only temporary. Such reasoning is, however, fallacious, for the only way in which the individual can get rid of his money is by handing it

over to somebody else. *Society as a whole is not rid of it.* If the shopkeepers, who, under our Santa Claus hypothesis, have already had their till-money multiplied by two, receive, in addition, the surplus cash of their customers, they will be doubly embarrassed with a surplus fund on hand and will, in turn, seek to make some use of it, either by investing it in goods for their business or by depositing it in banks. That is, the expending by each person of his surplus merely results in pushing it along from person to person. The average person still has more money to buy with; but nobody has more goods to sell. The effect on prices will be upward, and this effect will go on until prices have reached a sufficiently high level to stop the process.

Nor can this conclusion be avoided by supposing that most of the money is not expended, but deposited in banks. The bankers whose deposits are thus suddenly swollen will now be the ones with the surplus. Bankers do not wish to have idle reserves, and they will make the increase in the reserves the basis for an increase of business. Moreover, those who deposited the surplus money will draw checks against it in the effort to expend it rather than keep it idle, and these checks will likewise raise prices. And, as the prices rise, the banks' customers will have to keep pace with the rise by enlarging the scale of their operations, loans, and deposits. For instance, a merchant, in order to buy a certain stock in trade with money borrowed at the bank, will have to borrow more because the prices of the commodities he needs have gone up.

In the end, the doubling of society's money will mean

an increase (1) of the money in actual circulation, (2) of the money in banks, (3) of the loans and deposits based on this money, and (4) of prices. Approximately all these will be doubled. For, as long as prices fail to double, the surpluses and the tendency to spend them will continue to exist. Individuals, tradesmen, and bankers will all be trying to make use of their surplus, and their efforts to do so must tend to raise prices. Only when prices have reached about double their original level will the large stock of ready money cease to be regarded by its possessors as a surplus. At that time, since $80 will buy only what $40 bought before, the additional $40 will no longer seem superfluous. People will find their wages or incomes doubled likewise. Thus, if formerly the average individual was accustomed to expend $1000 a year and to carry an average balance of $40, he will now expend $2000 and carry an average balance of $80, the $80 being exactly the same relatively to $2000 as the former $40 was relatively to $1000.

Needless to say, the imaginary case just described is highly theoretical. Many qualifications need to be made in practice, especially those due to the existence of debts. As will be emphasized in the next chapter, debts are fixed in terms of dollars and, unlike prices, could not change. The supposed prank of Santa Claus would therefore upset debts as well as disturb somewhat the exactly proportional changes just supposed. The essential fact that an increase of money tends to increase prices would, however, remain unaltered.

The imaginary example we have given represents roughly what happens when new gold is discovered.

The mine owners convert their product into money, getting coin or "yellowbacks" (gold certificates) from the mint. They then find themselves in possession of money far beyond what is needed for pocket money. Suppose one of these men gets from the mint a thousand gold dollars while, for pocket money, $50 is sufficient; he is almost sure to get speedily rid of at least $950 by spending it for enjoyables, investing it in durables, or depositing it in the bank. In any case he and the hundreds of others in the same situation tend to raise prices in the community where they are expending their money, or where they and others draw checks on the banks in which it is deposited.

It was thus that prices rose in the mining camps of California a half dozen decades ago and in Colorado and the Klondike one or two decades ago. This local rise of prices soon communicated itself to other places; for the price level in one locality cannot greatly exceed that in a neighboring locality without causing an export of money from the former to the latter as a cheaper market to buy in. Thus, new money gradually finds its way into circulation throughout the world, raising prices as it flows from place to place, the process consisting, in all cases, of the effort on the part of somebody to make use of an otherwise idle surplus, — a surplus which cannot be dissipated by transferring it from hand to hand, but only by a rise of prices.

15. Tracing the Invisible Source of the Tide

This operation, by which an increase of money causes a rising tide of prices, is so subtle and pervasive that it seems to come from nowhere in particular and every-

where in general. The price of butter at the corner grocery is lifted on this tide without our being able to observe the connection of the rise with inflation, just as a fisherman's boat is lifted by the tides of the sea without his being able to connect the rise with the action of the moon.

To answer categorically, therefore, the question, How does inflation raise the price of butter at the corner grocer's, we may say: (1) partly because his customers have more money to spend, and (2) chiefly because the prices he pays to the wholesaler have been raised; and the wholesaler's prices have been raised for the same two reasons, *i.e.* (1) partly because *his* customers have more money (and purchasing power generally) to spend, and (2) chiefly because the prices *he* has to pay have been raised; and so on indefinitely. In this explanation at each stage the chief factor is the second — the rise of some *other* prices. But as we proceed to trace it back through other stages this second, apparently chief, factor is, at each stage, resolved partly into the first — the abundance of money. What is not thus resolved at the early stages of this tracing back becomes so in the end. When, therefore, all stages are considered, the second factor melts away, and the first factor which at any one stage was the lesser turns out to be "the whole thing."

In the literature on the high cost of living we sometimes find partial glimpses of the series of readjustments above described. Some newspapers have said that higher wages, by increasing costs, require higher prices of the goods produced and that, in turn, high prices in the form of the high cost of living require high wages, and so on in "a vicious circle." Others have called

the raising of prices a game of ring-a-round-a-rosy and everybody following his neighbor. A book, " Keeping up with Lizzie, " has been patterned on this idea. This notion that in the price-raising process prices influence each other in endless chains or circles is quite correct, but the notion that the initial step is arbitrary and that there is really no beginning or end of the process is incorrect. Prices do not lift themselves by their own bootstraps.

In short, the process by which inflation raises prices is misunderstood because, at any stage, it is almost invisible. The only big reason the grocer can give for raising his prices is that the wholesaler has raised his. The only big reason any expert on a particular price can give is that other prices have risen. But when one price thus boosts another it simply transmits the boosting power of the underlying inflation.

16. Other Causes than Money

The price level is affected not simply by the quantity [1] of money in the strict sense but by a number of other factors. The price level may rise not only because of an increase of money (whether primary money like gold or secondary money like paper), but also because of an increase of deposit currency, " money I have in the bank," which is paid out in checks, or because of an increase in the rapidities of circulation of the money or deposits, or because of a decrease in the volume of

[1] There are still a few students of money who do not accept any form of the "quantity theory" of money. Fortunately, however, the proposal of this book, described in Chapter IV, is not bound up with this theory, even in the form stated in my *Purchasing Power of Money*. See below, Appendix II, § 1, D, E.

trade. And back of these causes (gold money, paper currency, deposit currency, their respective velocities, and trade) lie innumerable other causes acting through one or more of them.

The relative importance of the several causes in affecting price levels varies with circumstances. Thus, in 1914 at the first shock of war, there were very complicated changes [1] including a slowing-down of trade and of the velocities of money and of the deposit or check circulation and a temporary shift from credit to cash. But in almost all great and prolonged price movements the chief factor is the quantity of money. Seldom has the volume of trade been the chief factor; for statistics show a great steadiness in the growth of the volume of trade.

We may conclude, on the basis of all the evidence, that to monetary causes in general (money, deposits, and their velocities) we should ascribe the great bulk of almost all changes in the price level. In short the chief causes of the variations in the purchasing power of the dollar are to be found in the dollar itself.

[1] Irving Fisher, "Equation of Exchange for 1914, and the War," *American Economic Review*, June, 1915; see also same journal, author, and subject, June, 1919.

CHAPTER III

THE EVILS

1. The Evil of High Prices is Not General Impoverishment

Price movements, then, are usually, and for the most part, of monetary origin. We must not be deceived by appearances. Just as he who would picture the astronomical movements as they really are must conceive a mental image not of a sun and stars concertedly rising and setting around a fixed earth, but of a sun and stars, substantially fixed, shining on a whirling globe, so he who would picture economic movements as they really are must likewise conceive not of the concerted dancing of numberless commodities relatively to a fixed dollar, but of the dance of the dollar relatively to a nearly fixed mass of commodities.

But here the reader may be tempted to conclude that the high cost of living is merely nominal! If prices have doubled not because goods have become scarce but only because the dollars in which they are expressed have been cut in two, what of it? If we use twice as many dollars because we have twice as many to use, where is the harm? We are thus brought to the third question, "What of it?"

Now it is quite true that our high cost of living is not so great an evil as some people think it to be; it is not so bad as though the cost of living had risen while in-

comes had not risen. That would mean that, for the average human being, economic effort was producing less and less. But the fact is that, in general, throughout the world — certainly before the war — goods had *not* been growing scarce. Incomes were rising all over the world and, in general, they were rising *faster* than the cost of living. Recurring to the figures of Professor W. I. King, we find that the estimated per capita income in the United States increased between 1900 and 1910 by 41%, whereas the price level rose only 25%.

This average improvement, however, does not settle the matter. The evil is not one of average well-being but one of its distribution, and the question remains: Who has got the benefit of this increased production? Some incomes change less than others and some do not change at all. It is in this inequality — an inequality in the change of individual incomes — that the chief evil of general price movements is to be found.

If, for *each* of us, the rise of income were to keep up with the rise in the cost of living, then the high cost of living would have no real meaning. The rise would be merely on paper.

2. Contracts Upset

But no such perfect adjustment between rise in income and rise in cost of living ever occurs or can occur. Agreements made at various times to pay specific sums of money at later times make this impossible.

Consider the debtor and creditor relationship. If Congress should suddenly decree that the present fifty-cent piece should henceforth be known as a "dollar," it is clear that, in practice, the change would not be

merely nominal; for while current prices would quickly be doubled the terms of contracts already made would not be adjusted. Therefore every creditor, every bondholder, every bank depositor, would clearly be cheated out of half his due.

If, on the other hand, Congress should decree that what has hitherto been a "dollar" should henceforth be fifty cents, every debtor would be suddenly saddled with a weight of debt twice as heavy as that which he had originally assumed.

In either case incalculable injustice would be wrought. One of the parties to every contract would be swindled for the benefit of the other; and the swindle would affect the fortunes for good or ill of almost every family in the land.

Now this same principle of hardship applies to *any* change in the purchasing power of the dollar.

It does not in the least matter whether the change is intentional. Moreover, it cannot properly be said that, for an unintentional change, there is no human responsibility. We, the people, neglect the problem, and therefore Congress which, under the Constitution, has the power to regulate the value of money, neglects it also. Consequently, with each change in the purchasing power of money (in other words, with each change in the price level), some people lose what properly belongs to them and others gain what does not properly belong to them.

3. Salaries and Wages Slow to be Adjusted

Nor does the injustice stop with actual outstanding contracts enforcible by legal process. There are many charges which remain fixed from mere custom or

inertia and are only sluggishly adjusted to a change in the purchasing power of money. This is true of the salaries of clerks, teachers, and public officials, and of many professional fees. It is also true, to a considerable degree, of wages.

In recent years salaried men and wage earners have been losing; for, while salaries and wages have risen, they have not kept pace with the rise in prices. Some wages have remained unchanged for months or years after the cost of living has risen, and then they have only been forced up by strikes. According to the figures of the United States Bureau of Labor Statistics, real wages, *i.e.* their buying power, in 1917 when we entered the war were only a little over two thirds of what they were ten years before.

Furthermore, contrary to a common impression, the *average* workman (though not every type of workman) has lost ground during the war. The real wages in 1918 were only 80% of those of 1913.

"Minimum wage" laws lose their meaning under these circumstances; for a minimum wage which is at one time sufficient to maintain the standard of life is later, although sanctioned by the law, quite insufficient.

4. Rates Fixed by Law or Custom also Slow

Then, too, there are the numerous prices and rates fixed by law or custom, payable to public utilities and to the government. These include, for instance, licenses and fines, and transportation fares on railroads and trolleys.

Before the war, railroads, under their legally restricted rates, found difficulty in doing business, because, while

the prices they charged were fixed, their costs of operation had gone up with the rise of the general price level.

Street railways have likewise suffered because their fares were fixed by law, or charter, or custom, at five cents. Only after two decades, ending in bankruptcy or near-bankruptcy, have they secured, in some cases, a rise of fare to six, seven, eight, and sometimes ten, cents. In fact the plight of street railway companies is one of the facts most eloquently proclaiming the depreciation of money. Mr. Roger Babson has calculated that the street railways of the country have lost a billion dollars from this cause.

When street railways or water power rights are leased for fifty or a hundred years with the right of "recapture" by the Government, it makes a vast deal of difference what the dollar will be at the end of that time. The Wisconsin Supreme Court has had some interesting cases along this line.

Bengal is assessed for taxation on a permanent settlement fixed in rupees when they were worth $2\frac{1}{2}$ shillings each. They are now worth only $1\frac{1}{3}$ shillings each in gold, and gold itself has depreciated rapidly! As Major W. E. McKechnie, who calls my attention to this fact, well says, "Those who made the permanent settlement could have had no idea that money fluctuated in purchasing power." Similar absurdities could be cited in reference to Chinese customs,[1] and legal settlements in England and other countries.

[1] Under an existing treaty signed by eighteen powers, China cannot increase her import duties beyond a 5% *ad valorem* tax based on an average of the prices of 1897, 1898, and 1899. This amounts to only about $2\frac{1}{2}$% *ad valorem, based on the prices of to-day.*

5. Periods before and after 1896 Contrasted

The evils both of rising and of falling prices are well illustrated by two recent sharply contrasted periods: that from 1873 to 1896 and that from 1896 to the close of the Great War.

Prices were falling during the first of these two periods. People who had things to sell — the farmer and the active business man — complained that their profits were being cut down or entirely wiped out; for the prices of their products kept falling while many of the charges they had to meet — interest, rent, etc. — remained fixed. On the other hand, people who had money to lend — the "bloated bondholder" and the "dead hand" (estates, foundations, hospitals, endowed churches and universities, for instance) — were coming to "own the earth." Their money incomes were fixed, but each dollar would buy more and more every year. For the same reason salaried clerks were waxing fat and comfortable.

But from 1896 to the present, with prices rising instead of falling, the luck changed. The creditor, in his various guises of bondholder, savings-bank depositor, lessor, salaried man, and wage earner, became the victim; while the stockholder, the farmer, the business "enterpriser," and the bull speculator were the winners in the lottery. In a word, good luck befell the man who took what was left after paying a nearly fixed number of dollars (each with a diminished purchasing power) for his operating expenses, — his interest, rent, salaries, wages, etc.

Before the war, the loss to the creditor was proceeding at the rate of nearly three per cent per annum.

During the war, it proceeded at about eight times that rate.

It was during falling prices that such money-lenders as Hetty Green and Russell Sage made their fortunes. After 1896 and up to the present, this would have been impossible. For even had they saved every penny of interest and compounded it, they would have had only their labor for their pains and less actual purchasing power in the end than when they began! Because of our shrinking dollar no one could have accumulated fortunes by simple saving and investment at interest since 1896.

Hence it is that a new class of rich now inhabit the palaces on Fifth Avenue. The "bloated bondholders" could not keep up the old magnificence under the growing strain of high prices. They have given place to the "profiteers." In these two phrases the great untutored public shows a curious intuitive sense for the truth which it cannot quite comprehend. It knows at least "who got the money."

Shakespeare stated an economic truth when he said "there is a tide in the affairs of men which, taken at the flood, leads on to fortune." This tide between 1873 and 1896 carried the bondholders on to fortune and made them "bloated," while between 1896 and to-day it carried the stockholders on to fortune and made them "profiteers."

6. The Fault Is Not Personal but Social

It will do no good, of course, to rail at the lucky winners in the lottery. The public was greatly mistaken in attributing low prices to the "strangle-hold" of wicked bondholders and is equally mistaken to-day in

attributing high prices to the personal turpitude of profiteers. The fault is not theirs. While they have, in a sense, won their neighbors' stakes or picked their neighbors' pockets, they did so without intent to defraud. They have simply played the game. We should stop the game, not blame those who play it. How can we blame a business man (especially one who, as officer of a corporation, acts in the interests of others whose capital he is managing) for getting the best prices he can? We cannot expect him to sell below the market. In fact, if market conditions cause profits to fall into his lap, he would be recreant in duty to throw them away. What we should aim to do is to make such abnormal market conditions impossible.

7. Two Illustrative Cases

Consider a working girl who in 1896 put a hundred dollars in the savings bank. To-day if she has allowed it to accumulate at 3% interest, she has two hundred dollars. But things now cost about three times what they did in 1896, and when she sets out to spend her two hundred dollars she finds she cannot get as much for it as she could have got at the beginning for her original one hundred dollars. After a score of years of self-denial, where is her reward, her interest? She has (without the intention of anybody) been cheated out of it all, and more too, merely through the depreciation of the "dollars" in terms of which her savings account has been kept. Her interest accrued not even fast enough to offset the depreciation in her principal. Like Alice Through the Looking-Glass, she had to run as fast as she could in order to stay in the same place!

The bondholder is in the same plight. Perhaps nominally he has been "living on his interest"; but meanwhile the purchasing power of his principal has been decreasing, so that really, although without knowing it, he has been living on his capital. For, to keep the value of his capital unimpaired, he would have had to reinvest *all* his interest and more! Meanwhile the stockholder has made what the bondholder has been losing.

Dr. J. Pease Norton, referring to the first part of this period, has said: "The investor in bonds by saving all his interest payments and reinvesting would have been able to maintain his principal in purchasing power, but had he done this he would have had no income. Measured in purchasing power, the investment in stocks shows 6% per annum better than the investment in bonds."[1]

8. The Extent of Social Injustice

The total financial interests thus affected by changes in the price level are colossal.[2] Shortly before the war, Alfred Neymarck estimated the total securities then circulating in the world at 175 to 200 billions of dollars.

And to-day the volume of securities is greater, and the war-bonds have increased the total by probably more than 50%.

[1] "Stocks as an Investment When Prices Are Rising," *Securities Review*, Scranton, Pa., Sept. 1912. Several other writers (*e.g.* Charles Rist in *Revue Economique Internationale*, Brussels, March, 1913) have shown clearly that dividends rise greatly during rising prices and fall greatly during falling prices.

[2] For the enormity, in more senses than one, of the evils of paper money inflation, see Sumner's *History of American Currency*, N. Y. (Holt), 1884; Bullock's *Monetary History of the United States*, N. Y. (Macmillan), 1900 (especially pp. 40 and 74).

Besides negotiable or circulating securities there are many private debts which never circulate. There are savings-bank deposits and deposits in ordinary banks, running up into scores of billions and held by over a score of million of depositors. There are scores of billions of dollars in insurance contracts of various kinds, many of them running for long terms, such as the span of human lives. The widow whose husband twenty years ago insured his life for her benefit gets to-day only a little over one third of the purchasing power contemplated in the policy.

Between the fall of 1915 and the armistice the dollar suffered a loss of purchasing power of about 25% per annum. Consequently bondholders not only lost all of their interest (of, say, 5%) but 20% per annum of their principal besides! The stockholders, in the same period, have had enormous earnings. Professor Friday has shown that the dividends of corporations in the United States in 1915–1917 were eleven billions as against seven and a half billions in 1911–1913. This increase of itself would scarcely keep pace with the rising prices and increase in number of corporations. But there is to be added the fact that the corporate reinvestment in "surplus" account was thirteen billions in 1915–1917 as against four billions in 1911–1913!

Now, at the end of the war,[1] millions of people in the United States own Liberty Bonds; millions hold war savings certificates; millions are financially interested in the soldiers' insurance, which totals about forty billion dollars. And all these are in addition to the

[1] For a brief discussion of the grave problem ahead of us relative to war debts and price levels, see Appendix I, § 4.

millions who already held savings in banks or owned mortgages or bonds.

In Europe, of course, the shift between contracting parties was even more rapid, because the depreciation of their moneys went on more swiftly. The German bondholder must have been essentially ruined and the reported repudiation of the Russian debt only completed openly a process that had, under the cover of inflation, already gone far.

The total unjust shift of income and principal (assuming the present high price level to continue) from shrinkage of dollars, pounds, francs, and other monetary yardsticks, since 1896, doubtless exceeds a hundred billion dollars, half or more being during the war. Almost every year untold billions of dollars' worth of social injustice is endured.

One ultimate result (except so far as a reverse movement may affect the matter) will have been, in effect, to extort the major cost of the war from widows and orphans, colleges, and hospitals, savings-bank depositors, salaried men, and wage earners. These are those with relatively " fixed incomes."

9. Uncertainty

" Fixed incomes " ! What a mockery inflation and the consequent depreciation of the dollar in its purchasing power make of that phrase ! We who, through our laws, guarantee the inviolability of contracts and compel trustees to protect their wards by investing trust funds in such securities as bonds, permit, in fact sometimes cause by legislation, the loss, it may be, of half of these " inviolable " funds.

Of course, if its victims could clearly foresee a rise or fall of the price level, they would forestall it or offset it more or less successfully. And this is actually done to a slight extent. When prices are rising the rate of interest usually rises a little to compensate partially for the depreciated principal. People then realize that bonds are a poor investment and so the price of bonds goes down, that is, the rate of interest realized rises, while the opposite happens when prices are falling.[1] But experience shows that this compensation is seldom or never complete. Most people pay no attention to what has happened, much less attempt to forecast the future and to be guided by their forecast. Indeed, not many can escape even when they see the breakers ahead; for they are already tied up by long-time contracts.

And the few who do bother their heads over price movements are mostly professional speculators. One of the consequences of a shifting price level is speculation. The speculator, if he guesses right, makes money and lets the other fellow pocket much of the loss. And the other fellow includes the general public. The more the price level shifts and the more difficult it is to foretell it, the more active will be the speculator. So it was that, after the Civil War, with our fluctuating greenback dollar, speculation was rampant.

Already, after the World War, speculation has become rampant again and for the same reason. Unless we stabilize the gold dollar, it will continue. No one really knows now which way prices will move. The general expectation is, or has been until recently, of a fall, but

[1] See *The Rate of Interest*, Irving Fisher, (Macmillan), 1907, Chapter 14.

great borrowing, slowness of liquidation and of contraction of war currencies, economies of gold use and increase of deposit banking will tend to prevent it.[1]

The chief indictment, then, of our present dollar is that it is uncertain. As long as it is used as a measuring stick, every contract is necessarily a lottery; and every contracting party is compelled to be a gambler in gold without his own consent.

Business is always injured by uncertainty. Uncertainty paralyzes effort. And uncertainty in the purchasing power of the dollar is the worst of all business uncertainties. To mention but one specific instance, uncertainty as to the price level makes it dangerous to loan on mortgage. The banker fears that a great shrinkage of farm values may wipe out the margin which protects his mortgage and so requires a large margin. A stabler dollar would make a smaller margin sufficient, thus permitting the farmer to mortgage up to a large fraction of his farm value and so helping him and the banker as well.

One of the chief marks of a high civilization is the reduction of risks and the lessening of the many perils of life and property to which human beings are exposed. Judged by this criterion our unstable dollar is a relic of barbarism.

10. Trade Cycles

One of the results of such uncertainty is that price fluctuations cause alternate fluctuations in business; that is, booms and crises, followed by contractions and depressions. An upward price movement is apt to end

[1] See Irving Fisher, *The New Price Revolution*, Information and Education Service, U. S. Department of Labor, March, 1919.

in a business crash, after which there is a long fall causing an industrial depression, followed by another climb to the next crash. Yet the rank and file of business men do not realize the close connection between these cycles of trade and the instability of the dollar.

Briefly, the process is this: when prices rise, great profits are made because, as we have seen, the "profiteer" or stockholder wins without effort from the bondholder and from the employees on salary or wages. His easy profits lead him to "extend himself" until, when interest charges, rents, salaries, and wages do catch up, his prosperity ceases, he gets caught in debt, becomes a bankrupt, and involves others in a chain of bankruptcies.

A general crisis or even panic may ensue. In fact, a crisis is defined by Juglar as the culmination of an upward price movement, — that is, of a downward movement in the purchasing power of the dollar. Such crises have followed the exaggerated prosperity which often comes shortly after a war — for instance, after the Napoleonic Wars (in 1818), the Crimean War (in 1857), the Civil War (in 1866), and the Franco-Prussian War (in 1873). Then when prices fall the "fixed charges" are felt as a most serious drag on business and a depression of trade follows.

Yet it seldom occurs to business men that business thus staggers about because the dollar staggers.

11. Resentment and Violence

There may be persons who, at this point, are inclined to make the smug observation that what we don't *know* we suffer we don't really suffer. But we cannot take so easy-going a mind cure. On the con-

trary, not only are the evils of the redistribution of wealth and of the fluctuations, booms, crises, recessions, and depressions, which have been described, very real, but the fact that people do not understand them is itself an evil. For when people are hurt but do not know what hurts them, they become suspicious of almost everything and everybody.

This suspicion some years ago led to what has been known as " muckraking." Though many big criminals were thus exposed, their machinations were scarcely enough to explain a fraction of one per cent of the evil which our shifting dollar has done, and probably are not more than could have been uncovered at almost any time in our history if the same detective work were undertaken.

This muckraking, itself bred of discontent and suspicion, has intensified that suspicion and discontent; for it has exhibited in the limelight of the public press the enormous profits made by big business and high finance, in contrast with the pitiful pay of common labor. As the late Dean Carleton Parker of the University of Washington has said, this sort of public muckraking has created a fixed idea of grievance in the minds of observant and reflecting workingmen, and has much to do with the growth and bitterness of the " I. W. W."

Every rise in the cost of living brings new recruits to these malcontents who feel victimized by society and have come to hate society. They cite, in their indictment, the high prices of necessities and the high profits of certain great corporations, both of which they attribute to deliberate plundering by " profiteers " or a social system of " exploitation."

It never occurs to them that an impersonal cause could injure them and help others, and the idea of too much money they would hail as a grim joke.

To resentment and class hatred are also to be attributed, in part, overt acts of violence and sabotage in which sometimes the employer's factory is destroyed; and food riots in which sometimes the retailer's shop is wrecked.

12. Falling as well as Rising Prices Cause Discontent

Resentment and suspicion are equally rife in periods of falling prices. Some of us have not forgotten the resentment of the western farmers against Wall Street in the nineties, and the suspicion that the farmers' woes and the woes of poor debtors, as well as the depression of trade, unemployment, and even the panic of 1893, were due to the machinations of Wall Street. Bryan's famous speech before the Democratic convention of 1896, which made him the Democratic presidential nominee, was based on the idea that the laborer and the farmer were being crucified on a "Cross of gold," supposedly due to sinister influences. The political campaign of that year was full of allusions to the alleged "Crime of '73," meaning the demonetization of silver. Populism at that time took its cue from the intolerable burden of interest, just as socialism to-day takes its cue from the intolerable burden of the high cost of living. Recently a visitor in Kansas could find no populist. The reason given was that "there is too much money now for populism." This is an unconscious recognition of the fact that the farmers' interests now, instead of being injured as they once were by falling prices and

increasing burden of mortgages, are improving under rising prices and lightened mortgages. And just as populism stopped a few years after the fall of prices stopped, so will I. W. W.ism be arrested a few years after the arrest of the rise of prices.

13. War Prices Cause Discontent

When the history of the war is written, it may well be that we shall find that the growing popular unrest caused by the high cost of living, and the atmosphere of suspicion engendered, had something to do in giving a pretext for, if not causing, the Great War. In fact, before the war, rising costs of living were fast making socialists all over the world, including Germany, and the German government must have weighed, as one of the expected dynastic advantages of war, the suppression of the growing internal class struggle which this high cost of living was bringing on apace.

And, when all the evidence is in, it may well be found that the desire of the Bolsheviki to withdraw from the war was greatly stimulated by the soaring prices from Russian paper money inflation, as well as from scarcity of commodities.

Even in Germany, formerly so well disciplined, there was rioting during the war because of high prices, a part of which was certainly due to inflation. More recently a keen observer, an American officer at Coblenz, reports that the most plausible theory of the sudden collapse of German morale was that the German people were indignant over high prices, profiteering, and grafting. The labor troubles in France and England are attributed to the same cause. Lord D'Abernon says, according

to newspaper reports, that in his opinion 80% of the labor discontent of Europe is due to this cause. The labor discontent following the war is worldwide because the rise of prices is worldwide. This discontent is not confined to the countries which were actually engaged in the war, but is found in out-of-the-way places like Portugal and even in far-away New Zealand, once called "the land without strikes" but now afflicted with strikes because strikes seemed necessary to enable wages to overtake the high cost of living.[1]

If I am not greatly mistaken, further trouble is now brewing over high prices. While the war lasted it served, and properly, as an excuse and explanation. But now that the war is over, the high prices seem, to many, inexcusable. If, as I anticipate, prices remain at high levels and the public fails to see why, they will wish to wreak vengeance, some on one luckless object of their wrath, some on others — profiteers, landlords, employers, speculators, middlemen, retailers, trusts, railways, labor unions, etc. If the price level stays high, profiteering will increase — as an effect not a cause.

One result which will probably occur will both surprise and anger the public. This is a further great increase of earnings of industrial companies and a great increase in the value of their common stocks. For, if prices are to stay double what they were before the war, gross earnings will tend to double and, after deducting the "fixed" interest, rent, and dividends on preferred stock, the net earnings accruing to common stock will

[1] Intelligent business men in New Zealand understand that the basic cause of this reappearance of labor troubles is the depreciation of money, and, as a consequence, the New Zealand Board of Trade is now seriously considering the introduction of the plan for stabilization of money here proposed.

tend to *more* than double. The I. W. W. and other radicals will put their own interpretation on such prosperity of "Wall Street," the figures of which they are always watching. They will be right in thinking that the high profits represent social injustice. What they do not realize is that the injustice is chiefly against the bondholders, and that the transfer between these two classes of investors is an effect of raised prices, not their cause.

14. Adjustments Most Needed, the Most Unpopular

One of the most interesting and curious by-products of the maladjustments we have seen and of the misunderstandings of the nature of the process is that the public is most angry at those latest to seek relief by higher prices, the very ones who need relief most.

It was this mental attitude on the part of the public which so long prevented a rise in railway rates. The Interstate Commerce Commission, consciously or unconsciously, reflected public opinion when, prior to the war, it refused repeated requests for relief through a rise of rates. The public, instead of seeing in the general rise of prices a depreciation of the dollar and the consequent need of a prompt and corresponding rise in such prices as had remained unadjusted to the cheaper dollar, demanded indignantly, "Haven't we suffered enough already from the high cost of living? While we are protesting against the other conspirators who are raising prices and while we are trying to force them to reduce prices, we certainly won't permit this further addition to the high cost of living." In thus thinking of their own grievances they overlooked the

fact that the railways had been more long-suffering than themselves.

Until Mr. McAdoo, as director-general of railways in the war, raised the rates in 1918, they had been practically unchanged since 1896. Even including the advances of 1918, freight and passenger rates are but 12 and 20% higher,[1] respectively, than they were in 1896 while the price level has risen 200%!

The same strong public feeling long prevented a rise in the fares of electric railway companies above the traditional five cents.

If a five-cent fare was just in 1896 and if the other factors in the case, wages, material, equipment, etc., have, on the average, risen proportionally with the general rise in prices, that is, are three times what they were in 1896, then the "fair fare" for the companies to-day should be fifteen cents! Or, if to-day a five-cent fare is just and expenses in 1896 were lower than now in proportion to prices in general, the just fare in 1896 should have been about two cents!

In the same way tenants have deeply resented the rise of rents, long belated though it was. Rents did not respond to the rise in general prices for many years, in fact were, in some cases in Europe, temporarily remitted on the principle of the moratorium. When finally they did respond, they went up suddenly and, to the tenant already long injured by the high cost of living, the rent raising seemed "the most unkindest cut of all." As this book is being written the "rent profiteer" in Europe is being lampooned, insulted, and even stoned.

[1] See Theodore H. Price, "The Index Number Wage," *Commerce and Finance*, May 7, 1919.

Even more curious is the fact that the beneficiaries of high prices are themselves indignant over the high prices charged by others. Employers who are getting high prices and high profits often object strenuously to raising wages and salaries. Farmers who are getting high prices protest vigorously against paying high prices.

There is a true story which illustrates this. A farmer inquired from the manufacturer the present price of a certain type of buggy such as he had bought once before. The price quoted seemed to him outrageously high and he accused the manufacturer of "profiteering," reminding him of what the former price of this buggy had been. The manufacturer, after looking up the record of the transaction, and discovering that the farmer had previously paid for such a buggy by a shipment of wheat, reckoned at the low prices then prevailing, replied: "If you will ship to me for the new buggy the same amount of wheat you shipped for your old one, I will gladly ship the buggy and in addition will ship you a piece of household furniture and a good kitchen stove!"

In short, everybody is eager to take advantage of rising prices, but feels aggrieved if anybody else snatches the advantage away. Thus the high cost of living becomes a veritable "apple of discord."

If high prices have come to stay, of course the sooner all the adjustments are made the better. Wages especially need to be raised, as do salaries, rents, and the rates of public service corporations. It will probably be less disturbing, on the whole, to *level up* the few such things than to level down the many other things.

15. Bad Remedies

In short, either a rising or a falling price level wrongs great classes of society and brings discontent, suspicion, and violence. The public fails to discern the great cause lying back of all the trouble; but it detects, almost unerringly, "who's got the money" and, though less unerringly, at whose expense. It demands a remedy without first knowing the correct diagnosis.

Thus any price disturbance gives a hearing to all manner of reform movements, whether *apropos* or irrelevant and whether good, bad, or indifferent. For instance, Henry George's single-tax propaganda was aided both by falling and rising prices. During the falling prices there was the spectacle of the tenant oppressed by an increasing burden of rent and the independent farmer oppressed by an increasing burden of interest. These evils thrust the "land problem" forward, especially in Ireland and Kansas, and any proposal to solve the land problem got a ready hearing.

When, later, prices rose it was natural to attribute this rise to pressure of population for subsistence on the margin of cultivation, especially as by the time this theory was urged the belated rise of rents and of land values began. The high cost of living seemed explainable by high real estate values and raised land rents, and indignation against the system of private ownership of land was readily aroused, especially as numerous instances were at hand of great fortunes made from the unearned increment and of land frauds, land grabs, and exploitation by great corporations of natural resources.

Not all the reforms which thus get factitious help from price movements are genuine reforms.

The fact is that among the worst consequences of price convulsions are the vicious remedies proposed. Like the remedies of primitive medicine, they are often not only futile, but harmful. Yet the patient will always demand medicine. The let-alone policy will not do for him. He knows that the present condition of things is bad and needs changing. His attitude of mind is a frantic " I don't know exactly what's the matter or what needs to be done, but for Heaven's sake let's do *something*." It is clear, then, that *unless a scientific remedy is found and applied there is always great danger of quack remedies.*

In the nineties, after a prolonged fall of prices, which had begun in the seventies, when so much was said of the so-called " Crime of '73," several unscientific remedies were on the market. A book that went by the name of " Coin's Financial School " proposed the coining of all silver brought to the mint into silver dollars, each sixteen times as heavy as the gold dollar, although at that time a gold dollar would buy in the market not sixteen times, but about thirty-two times, its weight in silver. This book had a phenomenal circulation and influence; and the " 16 to 1 " remedy, which would have been worse than the disease, came very near being adopted. The movement for it was based on a consciousness of the true cause of the falling prices — inadequate gold; but, instead of regarding this impersonally and seeking merely to prevent further fluctuation, the " free silver " advocates put the blame on the " gold bugs of Wall Street " and sought to " get even " by a sudden debasement of the dollar equal to fifty per cent.

Since then, of course, we have witnessed, in gold itself, more than this amount of depreciation, — a gold

dollar to-day being worth scarcely a third of what the gold dollar of 1896 was worth. Yet who thinks of that depreciation as atoning for the "Crime of '73"! On the contrary, we regard that depreciation (as shown in the rising price level) as but another evil. We now wish to find a remedy for it as well; and so to-day we are being threatened with other unscientific remedies, such as revolutionary socialism, syndicalism, and Bolshevism. Reckless radicalism rides in on the wave of high prices.

16. The Loss Is General

We have seen that the primary evil of these aberrations is social injustice, a sort of subtle pocket picking. At first glance it might seem that such a transfer is not a general evil; for what some lose others seem to gain, and they do — at first. But the *secondary* evils are very general, namely, the evils from speculation, uncertainty, crises, depression, resentment, violence, ill-considered "remedies." Moreover, curiously enough, as with ordinary gambling, even the ill-gotten gains of the winners are largely swept away in the end. Thus, as during the present rise of prices, strikes, riots, violence, and the other secondary effects of rising prices destroy the profits of the winners by blocking the wheels of industry and even destroying its tools. If we are going to have discontented workmen smash our windows and run the wooden shoe through our machinery, it is not so much a question of who is going to get the profits as a question of whether there are to be any profits. If we want workmen to be contented, we must let them have a fair share of prosperity and not let a shrinking dollar defraud them.

Furthermore, the crisis which follows the "boom" period is of itself a day of reckoning, at which the profit-taker pays dearly for his prosperity.

Similarly, during a period of falling prices, when the vampire is not the profit-taker but the creditor, the winner is also apt to lose his winnings when, as was shown in § 10 above, the stipulated interest he exacts grows into an intolerable burden and bankrupts the debtor. A special injury to business comes when the creditor forecloses his mortgage on industry and undertakes to run it himself. The creditor — especially the ordinary bondholder — is, usually and normally, the simple investor of capital, the "silent partner" in business. He lacks the temperament and training to be a captain of industry. Nevertheless, after years of falling prices during which he has been draining, unobserved, the life blood of the enterprise whose bonds he holds, until there is no profit left for the captain of industry who has been managing it, the mortgage is foreclosed and the captain, held responsible for the shipwreck, is forced out, discredited, and humiliated, and wholly unable to articulate or even to understand that it was not wholly his fault, if at all, but the fault of his instrument of reckoning, the dollar. Thereupon the bondholder is forced to take control. Thus the management drifts into wrong hands, turns into mismanagement, and the bondholder is hoist with his own petard. Like Shylock, though unconsciously, he has been exacting his pound of flesh until he has overreached himself. As David Harum wisely said, "It ain't a bad idee to be willin' to let the other feller make a dollar once 'n a while."

The wage earner also is involved in the catastrophe.

Primarily a gainer when prices are falling, because his wages fall more slowly than prices, he nevertheless suffers more unemployment during this lowered cost of living than during rising prices, and in the mismanagement, at the end, he suffers with the rest.

In short, almost no one gains long or gains much either from rising prices or from falling prices. To society as a whole, there is, in either case, a great net economic loss as well as great injury to social justice and good will.

17. Conclusion

Thus this seemingly simple little matter of shortening or lengthening the monetary yardstick, so far from being a merely nominal and unimportant change, is really more or less responsible for some of the greatest events in history.[1] It causes mighty convulsions of prices and these, directly or indirectly, rock the social structure to its foundation.

[1] Besides the effects of price movements above cited, which are specifically evil, history is full of other great effects, — some even beneficent. Price movements, like wars, inevitably arouse, irritate, stimulate. Falling prices stimulated the great Irish land agitation and the Home-rule movement because of the pitiable condition of the Irish peasant debtors. Falling prices stimulated the idea of Protective tariffs. Rising prices stimulated the idea of Free Trade. England abolished the corn laws when the cost of living was rising, and under the same whip the United States adopted the Underwood low tariff and, earlier, the low tariff of 1857. It was as an antidote for the falling prices of the '20s and the '90s that the doctrine of protection scored its greatest successes in the United States. Not only economic history but political and social history would have been totally different had it not been for the aberrations of monetary units.

CHAPTER IV

A REMEDY

1. Remedies Which Have Been Proposed

We are now ready for the practical question for which this book was written, " What are we going to do about it? "

The following is a list of the measures to stabilize prices which I have seen in the last ten years, a few of which have, in some places, been adopted: parcel post; farm loan facilities; workmen's compensation; other forms of social insurance; Government ownership of public utilities; socialism, of every variety; reduction of human disease and disability; prohibition; " the simple life," including abandonment of social obligations and " emigration " to a different part of town (as in the book, " One Way Out "); housekeepers' market clubs; municipal slaughter houses; state bakeries and butcher shops; trolley freight service; coöperative selling by farmers; utilization of empty city lots; municipal markets; scientific management; reduction of middlemen; coöperation; profit-sharing; publicity as to prices and profits; the single tax; lower tariffs (in the United States and Germany); higher tariffs (in England); better supervision of weights and measures; use of bulk goods instead of package goods; use of " cash and carry " system, instead of " telephone and deliver "; repeal of tax on

oleomargarine and other taxes on consumption; reduction of railway rates (in France), namely, on vegetables and fresh fish, with increase of rates on fodder for export (the idea being to keep fodder at home and make meat cheaper), and certain encouragements to importation of cattle from Algeria, Tunis, and elsewhere; encouragement (in Switzerland) of import of frozen meats from Uruguay; municipal selling of potatoes, fish, and certain other foods at cost; laws against speculation and monopoly; price fixing; regulation of cold storage plants (in the United States); granting of subsidies to cold storage plants (in France); general food control by the Government; publicity as to prices and profits; trade unionism; the destruction of trade unions; inflation; elastic currency; bimetallism; sliding scale of wages based on cost of living; disarmament.

Much as I should like to, I shall not take space to discuss these proposals in detail. Some of them have already been mentioned as evils rather than remedies. Others, though most excellent in themselves, are irrelevant to the problem of this book; that is, they would not tend in the least to stabilize the price level and the purchasing power of money. They would help us to endure the high cost of living but would not reduce or prevent it. Some of them may even be more important to the sum of human happiness than the remedy about to be proposed. That remedy is not in the least in conflict with such measures but supplementary to them.

The above list of proposals is given, therefore, not for indiscriminate condemnation, but as showing in what direction people tend to think when the problem

of the high cost of living is mentioned. The fact that such proposals are mostly concerned with economy and efficiency in the production, distribution, and consumption of goods shows that little thought is ordinarily given to the other side of the market, *i.e.* to the monetary aspect of the question.

There are really two problems included under "the high cost of living": (1) the problem of the size of our incomes; and (2) the problem of how much each dollar of our incomes will buy. The first of these is more properly "the problem of income"; the second alone is strictly the problem of "the high cost of living."

One trouble with most of the proposals above mentioned is that, though they are concerned with the first problem rather than the second, they are expected to solve the second problem too. Disappointment follows their application, and unless a genuine solution of this second problem, *i.e.* an effective means of stabilizing the price level, is found, a bewildered and infuriated public is apt to keep on trying every sort of alleged remedy, good, bad, and indifferent, often with disastrous results. The plan which I shall propose has reference solely to the solution of this second problem, — the problem of the purchasing power of the dollar.

2. The Dollar the Only Unit as Yet Unstandardized

The real culprit being the dollar, the real remedy is to fix the purchasing power of the dollar.

Our dollar is now simply a fixed weight of gold — a unit of weight, masquerading as a unit of value. A twentieth of an ounce of gold [1] is no more truly a unit of

[1] To be exact, the fine gold in a dollar is $\frac{1}{20.67}$ of an ounce.

value or general purchasing power than is a pound of sugar or a dozen eggs. It is almost as absurd to define a unit of value, or general purchasing power, in terms of weight, as to define a unit of length in terms of weight, to define a yardstick as, let us say, any stick which weighs an ounce.

What good does it do us to be assured that our dollar *weighs* just as much as ever? Does this fact help us in the least to bear the high cost of living? What we really want to know is whether the dollar *buys* as much as ever. We want a dollar which will always buy the same aggregate quantity of bread, butter, beef, bacon, beans, sugar, clothing, fuel, and the other essential things for which we spend it.

There used to be a song about a shopkeeper who, being asked the price of a box of socks, replied, "One dollar a box." "I'll take the box," said the customer, handing over his dollar; whereupon the shopkeeper took out the socks and handed over the box. "I sold you the box, not the socks," said he!

Our dollar is somewhat like that box. It keeps its form, but loses its content. The removal, in this case, is not intentional or committed by one of the parties to the contract, but so much the worse! — for the injured party has no recourse. It is as though the buyer of the box of socks were forced to agree in advance to let a bystander remove or insert socks *ad libitum*.

What is needed is to stabilize, or standardize, the dollar just as we have already standardized the yardstick, the pound weight, the bushel basket, the pint cup, the horsepower, the volt, and indeed all the units of commerce *except* the dollar. All these units of

commerce have passed through the evolution from the rough-and-ready units of primitive times to the accurate ones of to-day, when modern science puts the finest possible point on measurements of all kinds.

Once the yard was defined, in a rough-and-ready way, as the girth of the chieftain of the tribe and was called a gird. Later it was the length of the arm of Henry the First and, still later, the length of a bar of iron in the Tower of London. To-day we have at Washington a Bureau of Standards where the modern yardstick is determined by a bar of metal alloy kept in a room of constant temperature, under a glass case, and not approached by the observer, lest the warmth of his body should cause it to vary, but sighted by a telescope across the room!

Except the dollar, none of the old rough-and-ready units are any longer considered good enough for modern business. The dollar is the only survival of those primitive crudities. Imagine the modern American business man tolerating a yard defined as the girth of the President of the United States! Suppose contracts in yards of cloth to be now fulfilled which had been made in Mr. Taft's administration!

And yet the shrinkage in such a yardstick would be no greater than the shrinkage we have suffered in the far more important yardstick of commerce, the dollar; and this yardstick is used in all the contracts in which the yardstick of length is named and in all others besides!

Consequently the evils our unstabilized dollar works — evils of confusion, uncertainty, social injustice, discontent, and disorder — are as vast as would be the evils experienced if *all* the other units of commerce —

the yardstick, the bushel basket, the hour of work, etc. — should vary concertedly to the same extent.

We tolerate our erratic dollar only because the havoc it plays is attributed to other agencies. If its victims knew the truth about the dollar, it would be stabilized at the very next session of Congress.

We tenaciously cling to the blissful assumption that our dollar never varies. We seem to like not only, as Barnum said, to be humbugged, but even to humbug ourselves.

3. An Imaginary Goods-Dollar

A true standard of value (general purchasing power over commodities) such as we would like our monetary standard to be should not be dependent on one commodity merely, whether that commodity be gold or silver or wheat or any other single sort of goods.

Two commodities would be better than one, just as two tipsy men walk more steadily arm in arm than separately. Whenever they tend to lurch in opposite directions they neutralize each other. This is the argument which used to be urged for bimetallism, symmetallism, and other plans for uniting gold and silver. And the argument applies whenever gold and silver move in opposite directions, as from 1873 to 1896. If, for instance, a generation ago, we had adopted a dollar of an alloy [1] consisting of half of the former gold dollar and half of the former silver dollar, our price level would not have suffered the rapid fall it did prior

[1] A bill for this purpose was actually proposed in 1879 by Congressman Stephens (Hepburn, *History of Currency in the United States*, p. 288).

to 1896 in common with the price levels of other gold-standard countries, nor would it have suffered the rapid rise which the units of silver-standard countries experienced. It would have kept intermediate between the diverging price movements of gold countries, on the one hand, and silver countries, on the other.

But such an alloy of only two commodities, while in many cases it would be steadier than either one alone, and in all cases steadier than the less steady of the two, would not really be very steady.

A composite of gold, silver, copper, platinum, and all the other metals would be somewhat more stable than an alloy of two, just as a number of tipsy men can walk more steadily arm in arm than two only, it being wholly unlikely that all men in the line will lurch in the same direction at the same instant. The lurching of some in one direction can almost always be depended on to offset materially the lurching of others in the other direction. We can usually trust to chance if there are enough chances to trust to!

But why use metals exclusively? The index numbers of the United States Bureau of Labor Statistics show that the group of "metals and metal products," taken as a whole, is the most erratic of all the groups [1] of commodities.

In order to secure a dollar constant in its purchasing power over goods in general, it should represent a composite of those very goods in general. We should therefore make our gold dollar correspond in value to an imaginary composite goods-dollar consisting, say, of:

[1] The groups are nine, namely: farm products; food, etc.; cloths and clothing; fuel and lighting; metals and metal products; lumber and building materials; drugs and chemicals; house furnishing goods; and miscellaneous.

1 board foot of lumber (made up of various kinds as would be the case with other commodities)
$\frac{1}{40}$ of a bushel of wheat
$\frac{1}{4}$ of a pound of steers
$\frac{1}{4}$ of a pound of meat
15 pounds of coal
$\frac{1}{200}$ of a barrel of wheat flour
$\frac{1}{2}$ of a pound of sugar
$\frac{1}{4}$ of a pound of hogs
$\frac{1}{6}$ of a pound of cotton
$\frac{1}{6}$ of a gallon of petroleum
$\frac{1}{2}$ of an egg
$\frac{1}{2}$ of a pint of milk
$\frac{1}{2}$ of an ounce of butter
$\frac{1}{60}$ of a bushel of corn
$\frac{1}{60}$ of a bushel of potatoes
$\frac{1}{200}$ of a pair of shoes
$\frac{3}{4}$ of a pound of hay
$\frac{1}{2}$ of an ounce of steers' hides
$\frac{1}{2}$ of an ounce of tobacco at the farm
$\frac{1}{4}$ of an ounce of manufactured tobacco
$\frac{3}{4}$ of an ounce of lard
$\frac{1}{4}$ of an ounce of leather
$\frac{1}{15}$ of an ounce of wool
$\frac{1}{4}$ of a pound of steel
$\frac{1}{2}$ of an ounce of copper
$\frac{1}{20}$ of an ounce of rubber
$\frac{1}{6}$ of 1% of a gallon of drug alcohol
1 ounce of soap
etc., etc.

These happen to be roughly the relative quantities of some of the commodities used by the United States

Bureau of Labor Statistics in making up its index number of prices. The entire list, of which the articles specified are the more important, is actually worth about one dollar to-day.

If we could, in some way, make our gold dollar equivalent to such a market-basket dollar, *i.e.* a composite dollar consisting of a big basket or package containing those bits of goods, that composite basketful of commodities — or "goods-dollar," let us call it — would evidently have to be worth a dollar at all times; and the cost of living — at least the cost of the representative assortment in that basket — *could not* rise or fall. That assortment would always cost a dollar simply because a dollar *was* the equivalent of that assortment. In short, it would be just as simple then to keep the price of the composite basketful of commodities invariable (however widely its constituents might vary among themselves) as it is now to keep the price of gold invariable. The price of that composite would always be a dollar, just as to-day the price of gold is always $20.67 an ounce, and just as, under an egg standard, the price of a dozen eggs would always be a dollar, and just as, with an alloy of gold and silver, the price of that alloy would be constant, however much its constituents might vary relatively to one another.

And this composite goods-dollar is not altogether a joke. I am going to suggest its adoption — indirectly, at least!

4. The Gold Standard Not to Be Abandoned

Some literal-minded reader is now eager to point out how inconvenient, not to say grotesque, such a market-basket dollar would be if it were in circulation or were

used for export or import! With its 15 lb. of coal, it is far too heavy to carry; with its wood and hay, it is far too bulky; its half egg would spoil; while to divide a pair of shoes into two hundred parts would annihilate their value. Gold is to be preferred because it is imperishable, easily divisible, easily portable, and easily salable.

And these are precisely the attributes which led to the selection of gold; and not, as some people mistakenly assume, any attribute of stability.

By all means, then, let us keep the metal gold for the good attributes it has — portability, durability, divisibility, salability — but let us correct its instability, so that one dollar of it will at all times buy approximately that composite basketful of goods. Under the plan proposed only the gold dollar, duly corrected, is to be actually handled. The goods-dollar is merely a fiction in terms of which we may statistically test and correct the gold dollar.

Money to-day has two great functions. It is a medium of exchange and it is a standard of value. Gold was chosen because it was a good medium, not because it was a good standard.

The contention that gold became money because it was thought to be a good standard of value is an unfounded myth. Indeed, when it came into use as money, there were no index numbers and there was therefore no way of testing its stability or instability; and finally at that time there was not much need and not much thought of a standard of value, for the good and sufficient reason that there were few, if any, time-contracts, such as promissory notes, mortgages, and bonds. Almost all bargains were struck and settled on

the spot. When a man was about to make a cash purchase it was immaterial to him what the monetary unit was.

But to-day if a man buys an article and promises to pay for it in three months, the case is different. When the time for payment arrives it is very important for him to know whether the " dollar " is the same as was contemplated when the agreement was made.

With our modern contracts, running months, years, generations, or even centuries, including hundreds of billions of dollars' worth of agreements to pay money, — promissory notes, mortgages, debentures, railway bonds, Government bonds, leases, insurance contracts, etc., — the function of a standard of value, that is, a standard of deferred payments, has grown to be perhaps the more important of the two functions of money.

Yet because our ancestors found a good medium of exchange we now find ourselves saddled with a bad standard of value. What we need to do, therefore, is to retain gold as a good medium and yet to make it into a good standard; not to abandon the gold standard but to correct it; not to rid ourselves of the gold dollar, but to *make it conform in purchasing power to the composite or goods-dollar.*

Under the plan about to be presented, gold is retained; and there is essentially the same mechanism by which it freely enters or leaves the circulation. But under this plan the gold dollar becomes a standard *of value* instead of a standard of weight.

We now have a gold standard with the " standard " left out! When I am asked with a horrified air, whether this proposal is not really one to " abandon the gold standard " I like to answer: " No! it is to put the stand-

ard into the gold standard!" But abandon the *present* gold standard, so called, it certainly does, by converting or rectifying it into conformity with the composite standard.

5. Merely the Weight of the Gold Bullion Dollar to Be Varied

But how can we rectify the gold standard? That is the question which we set out in this chapter to answer. In brief the answer is: *by varying, suitably, the weight of the gold dollar.* The gold dollar is now fixed in weight and therefore variable in purchasing power. What we need is a gold dollar fixed in purchasing power and *therefore variable in weight.*

I do not think that any sane man, whether or not he accepts the theory of money which I accept,[1] will deny that the weight of gold in a dollar has a great deal to do with its purchasing power. More gold will buy more goods. Therefore, more gold than 23.22 grains will, barring counteracting causes, buy more goods than 23.22 grains will buy. Therefore if the dollar, instead of being 23.22 grains, or about one twentieth of an ounce of gold, were an ounce or a pound or a ton of gold, it would, other things equal, surely buy more than it does now, which is the same thing as saying that the price level would be lower than it is now.

A Mexican gold dollar weighs about half as much as ours and therefore has less purchasing power. If Mexico should adopt the same dollar that we have, no one

[1] Thus B. M. Anderson, Jr., probably the ablest writer among the few who still dissent from the "quantity theory" in any form, nevertheless approves of the proposal to stabilize the value of a dollar by adjusting its weight.

could doubt that its purchasing power would rise about twofold, that is, the price level in Mexico would fall about half. Likewise, if we should adopt the Mexican dollar, our prices would about double.

Let it be granted, then, that according as the gold dollar is heavier or lighter, the more or the less will be its purchasing power. It follows at once that, by adding new grains of gold to the dollar just fast enough to compensate for a loss in the purchasing power of each grain (and, of course, reversely, taking away gold to compensate for a gain), we can secure a stationary instead of a fluctuating dollar, in terms of purchasing power.

6. No Gold Coins to Be Used

Before the reader can accept the statement just made that the problem of stabilizing the dollar is soluble by varying the dollar's weight he will want to have three questions answered: Is it practicable to vary the gold dollar's weight periodically? By what criterion is the variation to be made? Will that variation actually stabilize the dollar?

First, as to the first question: How is it possible, in practice, to change the weight of the gold dollar or other monetary unit?

The feat is certainly not impossible; for it has often been accomplished. European history affords numerous examples. The Philippine peso was changed only a few years ago. We ourselves have changed the weight of our gold dollar twice; once in 1834, when the gold in the dollar was reduced 7%, and again in 1837, when it was increased one tenth of one per cent. If we can change the weight of a monetary unit once or twice a century, we can change it once or twice a month!

And if we circulate gold only through paper representatives redeemable only in gold *bullion* and discontinue gold *coins*, these periodical changes in the weight of the gold dollar can be made even more easily than the occasional changes which history records.

In actual fact gold now circulates almost entirely through paper "yellowbacks," or gold certificates. The gold itself (often not in the form of coins at all but of "bar gold") lies in the Government vaults.

A bar of gold bullion, nine tenths fine, weighing 25,800 grains, is just as properly to be called one thousand dollars of 25.8 grains each, as if that bar were cut up into a hundred separate pieces and each were stamped into a ten-dollar gold piece. The thousand gold dollars already exist embedded or welded together in that gold bar, while the right of ownership in them circulates in the form of paper "yellowbacks."

Since, then, even to-day, most of our gold dollars do their circulating in the form of paper, there would be no inconvenience if the *only* circulation of gold were in the form of paper. Most of the people in England who, before the war, carried gold in their pockets by preference, have already been weaned from the habit; and most of the few Americans (in California, Oregon, and Washington) who still do so are being weaned from it in the same way.

It would, therefore, be little more than expressing in law an existing custom if gold *coins* were abolished altogether. For simplicity, let us assume that this is to be done.[1] When, therefore, I speak of changing, from time to time, the weight of the gold dollar, the reader need not conjure up visions of repeated recoinages, or gold

[1] As noted in Appendix VI, § 3, *B*, this was proposed by Ricardo.

eagles of various weights jangling together in confusion in the market place. Let him rather banish gold *coins* entirely from his mind and think of a dollar as simply a certain number of grains of gold bullion in the vaults of the United States Treasury — that quantity changing from time to time but always definite and specific at any particular time; and let him remember that, in actual circulation, this gold bullion is represented by paper yellowbacks.

By thus assuming no actual gold coin to circulate but all gold to circulate only in the form of paper representatives, it would be possible to vary at will the weight of the gold dollar without any such annoyance or complication as would arise from the existence of coins. The Government would simply vary the quantity of gold bullion which it would exchange for a paper dollar, — the quantity it would give or take at a given time.

As readily as a grocer can vary the amount of sugar which he will give for a dollar the Government could vary the amount of gold it would give or take for a dollar. If to-day the Government were giving 25.8 grains of gold bullion to the jeweler or exporter for each dollar of certificates [1] he pays in, next month it might give 26 grains or only 24 grains, the increases or decreases being made, of course, for the purpose of compensating

[1] The wording on the certificates would, of course, need to be slightly changed. They could no longer be properly called warehouse receipts, nor would they, on the other hand, be exactly analogous to Government notes; they would be intermediate between the two. They might be described as "gold bullion dollar certificates." They would be redeemable at any time in the then official weight of the gold dollar — a variable weight but constant worth, instead of a constant weight but variable worth, as at present. For the proposed wording of the new certificate, see Appendix I, § 10.

for the decreases or increases in the purchasing power of the dollar.

7. The Essentials of a Gold Standard

Before proceeding to the second question of § 6, we may pause here to point out that the abolition of gold coin would make no material change in the processes by which gold flows into and out of circulation. Gold would, just as at present, be brought by the gold miner to the Mint or the Assay Office or other Government depository, and he would, just as at present, receive paper tokens, or yellowbacks, in return. The only difference would be that he would not always deposit the same amount of gold to get a dollar of yellowbacks. This sale of gold to the Government for yellowbacks, *i.e.* this *unrestricted deposit*, is the essence of unrestricted coinage or, as it is usually called, " free coinage." It is thus that gold gets into circulation through its representative, the yellowback.

Moreover, to turn from inflow to outflow, gold would, just as at present, be taken out of the Government vaults by jewelers or gold exporters and they would, just as at present, surrender yellowbacks for that gold. The only difference would be that they would not always get the same quantity of gold for a dollar in yellowbacks; the same certificate would be worth different amounts of gold at different times. Every dollar of gold whose corresponding yellowback was thus taken out of circulation, just as at present, would disappear into the arts or foreign circulation. The process would therefore be virtually a flow of gold dollars from the circulation into the arts or abroad. Such exchange is the unrestricted " redemption " of the certificates.

Thus unrestricted deposit and unrestricted redemption would go on substantially as at present, the one tending to increase and the other to decrease the volume of bullion certificates, that is, the virtual gold in circulation.

In short our gold-standard system may be pictured as a lake of gold, physically in storage but circulating through yellowbacks, a lake fed by miners and importers and drained by jewelers and exporters. This system, the lake and its inflow and outflow, would continue unchanged. Only the terms on which gold would be deposited and withdrawn would be changed.

8. Periodical Variations of Weight Based on Index Numbers

We find, then, in answer to the first of our three questions that a periodical variation of the dollar's weight can be made at will, and that, too, without changing, in the least, the nature of the mechanism by which the gold standard now operates.

We are now ready for the second question: What criterion is to guide the Government in making these changes in the dollar's weight? Am I proposing that some Government official should be authorized to mark the dollar up or down according to his own caprice? Most certainly not. A definite and simple criterion for the required adjustments is at hand — the now familiar " index number " of prices. The Bureau of Labor Statistics, which publishes our best present index number, or the Bureau of Standards or other suitable Government office, would be required to publish this number at certain stated intervals, say bimonthly.

To be specific, every two months (or whatever the adjustment period chosen might be) the Bureau would calculate from current market prices how much our composite basketful of goods costs. This figure (the index number of prices) it would publish; and this figure would then afford the needed official sanction to the Director of the Mint to change the weight of the gold dollar—that is, to change the amount of gold which the Government would give or take for a gold certificate, and thus increase or diminish the purchasing power of that certificate.

The certificate would always be equal in value to the gold dollar; and the gold dollar would be kept equal in value to the goods-dollar which is the ultimate standard.

If, for instance, the index number representing the current price of our composite basketful of goods is found to be $1.01, *i.e.* one per cent above the ideal par (*i.e.* above the *one dollar* price), this fact would indicate that the purchasing power of the dollar was too low, for it requires one cent more than a dollar to buy the ideal basket. This fact would be the signal and authorization for an increase of one per cent in the weight of the gold dollar.

If, on the other hand, the index number when computed is found to be one per cent below par, the purchasing power of the dollar is too high and a one per cent reduction of the dollar's weight is called for.

In short, then, our rule or criterion of adjustment is simply this: for every one per cent of deviation of the index number above or below par found at any adjustment date, we then increase or decrease the dollar's weight by one per cent.

9. How the Adjustment Rule Would Work

And now we approach the last of the three questions formulated in §6: Will the above rule for varying the dollar's weight really stabilize the dollar? How can we know that if the index number is one per cent above par, a one per cent increase in the weight of the gold dollar will be *just* sufficient to drive the index number back to par? The answer is we *do not* know, any more than we know, when the steering wheel of an automobile is turned, that it will prove to have been turned *just* enough and not too much. Many things may interfere in the period elapsing between adjustments. But if the correction is not enough or if it is too much, the index number, when next computed, will tell the story. Absolutely perfect correction is impossible but any imperfection will continue to reappear and cannot escape ultimate correction.

Suppose, for instance, that next month, or adjustment period, the index number is found to remain unchanged at 101%, that is, that the basketful of goods still costs $1.01. Then the dollar is at once loaded an additional one per cent. And if, next month, the index number is, let us say, $100\frac{1}{2}$, *i.e.* $\frac{1}{2}$ of one per cent above par, that $\frac{1}{2}$ of one per cent will call for a third addition to the dollar's weight — this time $\frac{1}{2}$ of one per cent. And so, as long as the index number persists in staying even a little above par, the dollar will continue to be loaded at each adjustment period, until, if necessary, it weighs an ounce — or a ton, for that matter.

But, of course, long before it can grow very heavy, the additional weight will become sufficient, so that the index number will be pushed back to par; that is,

the circulating certificate will have its purchasing power restored.

Or, reversely, suppose that the index number falls below par, say one per cent below — the basket costing $0.99. This fact will indicate that the purchasing power of the dollar has gone up. Accordingly, the gold dollar will be reduced in weight one per cent and, at each adjustment period during which the index number remains below par, the now too heavy dollar will be unloaded and its purchasing power brought back to par.

Thus by ballast thrown overboard or taken on, our dollar is kept from ascending or descending far from the proper level — that is, from the equivalent of our composite basket of goods.

In short, the adjustment, like all human adjustments, takes place "by trial and error." There is always a slight deviation, but this is always in process of being corrected. The steering wheel keeps the monetary automobile not exactly in the straight line marked out, but always near it on one side or the other, so that its deviations will always afford the criterion needed for steering it back.

The answer to the third question, therefore, is that the stabilization machinery, while it cannot absolutely prevent slight aberrations from par, will persistently tend to reduce toward zero every deviation which comes along.

It does not matter in the least what the cause or causes of deviation may be. They may be connected with gold or bank credit or anything else. The deviation, no matter how caused, would bring a counterbalancing change in the gold dollar's weight and the

change in that weight will continue to be made at every adjustment period as long as the deviation in the index number continues.

The result is that the price level would oscillate only slightly. Instead of great price convulsions, such as we find throughout history, the index number would run close to par, say, 101, 100½, 101, 100, 102, 101½, 100, 98, 99, 99, 99½, 100, etc., seldom getting off the line more than one or two per cent.

The process of correcting the dollar has just been likened to steering an automobile. It might better be compared to the automatic regulation of the "governor" on a steam engine or to the method of securing a "compensated" pendulum. Every aberration brings its own correction.

And so we conform our gold dollar, approximately, to the imaginary "goods-dollar." All other dollars being interconvertible with the gold dollar would keep equal to this par. No change in our banking system would be required except that the gold reserve of banks, instead of consisting partly of gold certificates and partly of physical gold, would consist exclusively of certificates. The Government would hold the physical gold. Whoever chose to redeem the gold dollar certificates in actual gold would do so usually to secure gold for jewelry and other arts or for export. Should a bank do so, the gold it so bought would, like so much silver, be liable to fluctuations in value.

To summarize, each dollar of bank notes and other fiduciary money would, as now, be redeemable in a dollar of yellowbacks (to be called gold bullion dollar certificates) and therefore such paper money would, exactly as now, keep at parity with these yellowbacks. Each

dollar of these yellowbacks, or gold dollar certificates, would, in turn, be redeemable at the Government offices in a gold bullion dollar and would, therefore, always be of equal value therewith. And finally, each dollar of gold bullion would, by periodical adjustment of its weight through an index number, be kept very nearly equivalent to the imaginary basket of goods, the goods-dollar.

In short, every actual dollar, a dollar of bullion, a dollar of yellowbacks, a dollar of bank notes or any other money, and a dollar of bank deposits would be *absolutely* equivalent to one another as well as *approximately* equivalent to the imaginary composite or goods-dollar.

We would then be substantially rid of a fluctuating price level with its long train of bad consequences. In other words, the monetary yardstick would be standardized.

10. Proviso against Speculation at Expense of the Government

To avoid speculation in gold at the expense of the Government, a small fee, corresponding to what used to be called "brassage," should be charged to depositors of gold and no single change in the dollar's weight should exceed that fee.

This is a technical detail and, with other technical points, such as the status of the reserve behind the gold bullion dollar certificates, the initial par of the index number, the selection and revision of the items making up the composite dollar, the possible retention of gold coins and coinage, the control of deposit currency, etc., need not here be entered upon. These are elaborated in Appendix I. What has been said in this chapter is

meant to show that we have the power, if we will but use it, to stabilize the purchasing power of the dollar.

11. Comparison with Other Plans

As we have seen, most other proposals for remedying the "high cost of living" would operate through economy and efficiency. Nothing could be more laudable and nothing needs to be preached more persistently, in season and out of season. An increase in production and the cessation of industrial warfare between labor and capital should, now and always, be striven for. To whatever extent these objects are gained, the world will be better off, whether prices are high or low.

But he who expects, from such measures, any appreciable reduction in the index number of prices is doomed to disappointment. The general expectation of such a reduction is based, first, on a false conception of the problem, due to overlooking its monetary side, and, secondly, to a greatly exaggerated idea of the economy and efficiency which are attainable. Thus, the worst of our great strikes reduces the national production only about as much as declaring a single holiday, and most of the wastes of industry, though great, are inevitable and can only be reduced slightly and gradually through education.

We may rail at the workmen and accuse them of slacking and ninety-nine per cent of them will plod along without even attending to what we say. We may legislate in the hope of forcing economy and efficiency on a wastrel world and shall be lucky if we succeed in doing a trifle more good than harm. I doubt

if all the combined effort of all the statesmen and moralists of the world could possibly, in a whole year, increase production by two or three per cent beyond what it would otherwise be.

Another sort of remedy, and the most popular one at the present time, is price control. During the war legal price control had its maximum effect which, while great on a few commodities, probably did not, as statistics can be adduced to show, affect the general price level as much as five per cent. That now in times of peace the effect could be half that much is almost unthinkable.

The job is too big for any man or any government. If our Government tries to fix retail prices to protect the customer it must then go further and fix wholesale prices to protect the retailer and then, likewise, fix the prices of jobber, manufacturer, and producer of raw materials. Thousands and millions of dealers will have to be watched, controlled, penalized, by a mighty host of government officials, sure to be circumvented as soon as their backs are turned.

I do not hesitate to predict that the present attempt to fix individual prices will end like all previous attempts, even those of autocratic Germany, in disappointment.

Is it not a little ludicrous to use so much force without much effect when the desired effect without any force at all could be secured through stabilizing the dollar? If we had tried to secure "daylight saving" by force, compelling each factory, store, school, church, to begin an hour earlier and each individual to eat his breakfast an hour earlier than before, the Attorney General would certainly have had his hands full!

Instead of thus employing an army of policemen, exerting repressive force at thousands and millions of separate points, we simply regulated our instrument of measuring time, the clock, and lo, automatically the factory, store, school, and church began an hour earlier and individuals ate their breakfast an hour earlier of their own free will.

So with the price level, while the strong-arm method is not only costly and vexatious but futile, the simple regulation of our instrument for measuring prices, the dollar, will accomplish the same result not only without cost and effort but, what is more to the point, with success.

It is very hard to control any individual price in the face of the economic forces of supply and demand, but it is very easy to control the general *scale* of prices; for the general scale of prices depends, among other things, on the weight of the gold dollar and the weight of the gold dollar is whatever we choose to make it.

However great may be the disturbing effect of some other cause on the scale of prices, that effect can always be neutralized by a suitable change in the weight of the gold dollar, provided, of course, that all other dollars are kept redeemable in gold dollars.

The gold dollar, being the basic unit, is the key to the situation.

CHAPTER V

CONCLUSION

1. Summary of the Plan

The plan, as set forth in the last chapter, is in brief:

(1) To abolish gold coins and to convert our present gold certificates into "gold bullion dollar certificates" entitling the holder, on any date, to dollars of *gold bullion* of such weight as may be officially declared to constitute a dollar for that date.

(2) To retain the "free coinage," *i.e.* to be more exact, the unrestricted *deposit*, of gold, and to retain also the unrestricted *redemption* of gold bullion dollar certificates.

(3) To designate an ideal composite or "goods-dollar," consisting of a representative assortment of commodities, worth, at the outset, a gold dollar of the present weight, and to establish an "index number" for recording, at stated times, the market price of this ideal goods-dollar in terms of the gold bullion dollar.

(4) To adjust the weight of the dollar (*i.e.* the gold bullion dollar) at stated intervals, each adjustment to be proportioned to the recorded deviation of the index number from par.

(5) To impose a small "brassage" fee for the deposit of gold bullion and provide that no one change in the bullion dollar's weight shall exceed that fee.

In addition to these features of the plan itself should be mentioned the tacit assumption that we retain a sound banking system. Without such, the effectiveness of the stabilization plan would be quite lost.[1]

2. The Crux of the Plan

The crux of the plan lies in (4) — the provision for adjusting the weight of the gold bullion dollar. This is the *adjustment rule* by which the index number regulates the dollar's weight. Its significance is that:

To keep the dollar from shrinking in value we make it grow in weight, thus recognizing that a depreciated dollar is a short-weight dollar; and, reversely, to keep the dollar from growing in value we make it shrink in weight, thus recognizing that an appreciated dollar is an overweight dollar.

Or, in alternative terms, since a heavier or lighter dollar simply means a lowered or raised price of gold, we may say that:

To keep the price level of other things from rising or falling we make the price of gold fall or rise.[2]

[1] For details, see Appendix I, § 7.

[2] These two statements and paragraph (4) of the above summary are really three different formulations of the same adjustment rule. There is a fourth: we prevent a loss or gain in the purchasing power of the dollar by lowering or raising the price of gold. All four modes of statement may be united as follows:

We restrain { a rise or fall of the price level / a fall or rise of the purchasing power of the dollar }
by { increasing or decreasing the weight of the dollar / decreasing or increasing the price of gold. }

For most people I think the original formulation (the 4th paragraph of the summary above) is the most convenient, namely, the one in terms of the price level and dollar's weight rather than in terms of the purchasing power of the dollar or the price of gold, or both.

3. Artificiality of a Fixed-Weight Dollar

At present, with a dollar always containing 23.22 grains of gold, the price of gold is always $20.67 an ounce. However far gold may really depreciate, our artificially defined dollar creates an artificially fixed price for gold. It does not allow gold depreciation to show itself in a lowered price of gold. Consequently it shows itself abnormally, — in the raised prices of other things.

It is both wrong and absurd thus to force these other things to register the fluctuations in the value of gold. When gold depreciates, its price should be reduced. Furthermore, when we see the price of anything else, say corn, rising, we ought to be able, as we are not now, to be reasonably sure that all of this rise represents a rise in that corn and not some of it a fall in gold. Reversely, when gold appreciates, its price should be raised; and when the price of anything else falls it should represent wholly a fall in that particular commodity, not partly a rise in gold.

At present the Government is not authorized by law to mark gold down when it goes down, nor up when it goes up. The grocer can mark his goods up or down. He can increase or decrease the number of pounds of sugar he will give for a dollar. But the Government is helpless.

When a flood of gold pours in from Cripple Creek or the Rand, or from war-ridden Europe, the Government is not permitted to increase the weight of a dollar's worth of gold above 23.22 grains or to decrease the price of gold below $20.67 an ounce. Instead, therefore, there is a redundant currency and a "high cost of living."

When, on the other hand, our exporters demand gold our Government is equally helpless to charge more for it — that is, to reduce the weight of a dollar's worth of gold below 23.22 grains. The law compels it to go on selling its diminishing store at the same old price of $20.67 an ounce; and so a violent contraction of the currency may follow.

In either case we leave our precious standard at the mercy of foreign conditions, of metallurgical inventions, the luck of gold prospectors, the fashions in jewelry, the changes in banking systems, and the policy of Government financiers.

The proposal here made is to authorize a raising or lowering of the sluice gates by which gold flows in or out, so as to keep our money lake at a uniform level. By increasing or decreasing the dollar's weight, we would thus be providing against either a flood or a drain.

4. Transition Would Cause No Shock

The plan should, of course, start off with a price level close to that actually existing immediately before its adoption.[1] There should, I believe, be no attempt to put prices back where they were many years ago. There would, therefore, be no shock. Business would simply be set free from future shocks.

There would be less shock than when we adopted standard time and changed our watches accordingly. Just as the time engagements of the whole world have been modified and improved by the shift of watches from local to standard time, and more recently by the

[1] This point is amplified in Appendix I, § 4.

" daylight-saving " shifts, so the money engagements of commerce would all be put on a true standard without jar or confusion.

Substantially the same kinds of money would be passed from hand to hand as before the system was adopted ; and the ordinary man would be quite unaware of any change in system, — as unconscious, in fact, of the operation of the new system as he is now unconscious of the operation of the present system, or as were the inhabitants of India when the " gold exchange " standard went into force a quarter of a century ago.

The only classes of people who would notice the change would be those who sell and buy gold bullion. The gold miners and importers of gold bringing gold to the Government for deposit, on the one hand, and the goldsmiths and exporters of gold, on the other hand, taking gold away, would find that the price they could get or would have to give respectively would not always be $20.67 per ounce.

5. Contract-Keeping Would Cease to Be Virtual Pocket-Picking

The plan would put a stop, once for all, to a terrible evil which for centuries has vexed the world, the evil of upsetting monetary contracts and understandings. All contracts, at present, though nominally carried out, are really tampered with as truly as though false weights and measures were used for delivering coal or grain.

As noted in a previous chapter, our National Constitution forbids the state to impair the obligation of contracts and the Government itself is supposed to

conform to the principle of this prohibition.[1] But with our variable yardstick of commerce, observance of the constitutional provision, at best, conforms only to the letter, not the spirit, because the letter of the contract, through the law, fixes the obligation in gold by weight, whereas the contracting parties are not properly concerned with what a gold dollar weighs; usually, in fact, they do not even know that a dollar is a weight-unit. The meeting of their minds is essentially on the basis of what a dollar is *worth* — that is, of what it will do for them in commerce; and they can make little or no allowance for any change in that worth.

Thus, under the very protection of the constitutional provision mentioned, one of the parties to the contract always does rob the other to some extent. This social pocket-picking, unconscious but real, would cease, if our monetary yardstick were regulated; and with it would cease also discontent, jealousy, and suspicion, in so far as these grow out of that species of social injustice. Crises and depressions of trade would be reduced in intensity, if not rendered impossible, and the fundamental reason for much unsound speculation would be taken away.

Business, now periodically disturbed by the pranks of our mischievous dollar, would be put on a foundation more secure than ever before because the greatest and most universal uncertainty or gamble, all the more disastrous because unseen — the gamble in gold — would be removed.

[1] With certain exceptions, such as bankruptcy laws for extraordinary cases. In this connection, see Appendix I, § 6.

6. Not a Cure-All

It is not pretended that to stabilize the purchasing power of the dollar would banish all complaint in the financial, business, and industrial world, much less serve as a substitute for progressive economies. A stable monetary unit would be no more a substitute for the fertility of the soil than a stable bushel basket. Yet a reliable bushel will indirectly help even the tilling of the soil; and a reliable dollar would remove a heavy handicap now put on our productive energy and so indirectly help all production. Dependable weights, measures, and standards eliminate those enormous wastes which come from uncertainty, and, of all the possible wastes from uncertain units used in commerce, those from an uncertain dollar are by far the greatest and the gravest.

Nor do I mean to imply that a stable dollar will insure a just distribution of wealth. It will, however, help toward that end not only by preventing a species of subtle pocket-picking (described in Chapter III), but also by clarifying the whole distribution situation. It will make sun-clear that the goods that come out of the annual wealth production of the nation are really growing or shrinking, and not merely being tossed about on the stream of money. It will give each man a sound basis for an opinion whether, when his fortunes change, they change relatively with the fortunes of others. It will go far to rid us of the conflict of opinion and assertion which now holds us back from effective action and uses up our energies in discussions and investigations of the most elementary facts. Current economic discussion is underlaid by conflicting assertions, — that the

laborer's real wages (*i.e.* the goods he can buy with his money wages) are increasing; that they are decreasing; that the hardships of wage earners are due to their own wasteful expenditures; that they are due to the greed of employing capitalists who seize an increasing share of the product; that they are due to neither of these things but to the absorption of an ever increasing share of the annual production by the do-nothing landlord or the private owner of natural resources, who expends neither labor nor capital on the development of these resources but merely leases them to men who do, and exacts tribute from the laborer and capitalist for the privilege; that the demands of certain classes of railway laborers for increased money wages are exorbitant and ought not to be granted; that the demands are necessary to balance the increased cost of living and ought to be granted; that the demands of the railways for increased freight rates or of the trolley cars for increased fares are necessary to make good increased costs due to increasing prices and wages; that these demands are not necessary for that purpose — and so on and on without end.

Before action upon these alleged evils can be based on sure ground, it is essential to find out the facts; but the fluctuating dollar hopelessly conceals the facts. It blinds the eyes of the mass of men whose right it is to know the facts and whose duty it ultimately is, under our democratic form of government, to choose one or more remedies for such evils as exist. The fluctuating dollar keeps us all in ignorance; whereas a stabilized dollar would lay bare the facts.

It is no exaggeration to say that stabilizing the dollar would directly and indirectly accomplish more social

justice and go farther in the solution of our industrial, commercial, and financial problems than almost any other reform proposed in the world to-day; and this it would do without the exertion of any repressive police force, but as simply and silently as setting our watches.

Uncertainty is a mark of an undeveloped civilization, and its demolition (through applied science, insurance, safeguards, and standardization) is one of the chief characteristics of a highly developed civilization. Our uncertain dollar is simply a relic of the Stone Age. It is an anomaly to-day.

7. No Claim to Theoretical Perfection

Perfection, of course, is not claimed for the proposed goods-dollar. It is not an "absolute" standard of value. An absolute standard of value is as unattainable as an absolute measure of length. A change in relative value may, theoretically, indicate a change in the "absolute" value either of goods or of money; but it is not possible for us to know, except in a general way, how much of the absolute change is in the goods and how much is in the dollar. We are in much the same situation as the astronomers. Our economical "fixed stars" are fixed only in a relative sense. We cannot measure the distances between them in terms of absolute value, but only in terms of visible goods, the general average of which, like the general average of the stars, is the nearest approach to absolute invariability we can, in practice, reach and measure.

The present proposal, therefore, is simply to do for the most important unit in all commerce — the dollar — what we have already done for every other unit.

8. Why Has So Simple a Remedy Been Overlooked

The cautious and conservative reader will ask: if the evils of our present dollar are so great and the remedy so simple, why did not our civilization improve its monetary units years ago, as it improved all other units? Why was so simple an idea overlooked or ignored?

There are several answers, some discussed in Appendix II: ignorance, the money illusion, and the absence, until recently, of any large mass of time contracts requiring any reliable standard of deferred payments.

But the most specific and conclusive answer is this: mankind could not have standardized money until recently, because until recently *it lacked the necessary instrument, the index number.* Just as mankind could not standardize units of weight until a suitable instrument, the scales, was devised for measuring weight; and just as electrical units, like the ohm and the kilowatt, could not be standardized until the proper instruments for measuring such magnitudes were invented; so money could not be standardized until the invention and the perfecting of the index number.

The index number, the only instrument we possess for measuring purchasing power, is a very recent invention. Professor Jevons a generation ago may, I think, be truly said to have been the inventor (although the general idea had been anticipated by others). But until the last ten or twenty years, this new instrument had not been sufficiently perfected and tested to create general confidence in its results. Only within that brief period has it come into general use among business journals and won the confidence of business men. We see, then, that the practical application of this great

instrument to the improvement of our crude dollar is belated, not centuries, but, at most, only a couple of decades.

9. What Is to Hinder

The plan really has had less important arguments against its adoption than any other practical proposal in the realm of money and banking of which I know. In most other proposals there are many valid pros and cons. This proposal is simply to make our monetary unit less variable. It is as unobjectionable as is a sealer of weights and measures.

The greatest obstacle, as is emphasized more fully in Appendix II, § 3, is the same as that which has held back every other reform in the world's history: namely, sheer conservatism, the "stand pat" frame of mind, the temperamental prejudice against innovation. This filibusterer may appear in many striking costumes and embellishments; but always it will be the same psychological personality. Usually, the opponents of perfectly obvious reforms are unconscious of this, the real source of their ingenious objections. And, once the composite standard has become an accomplished fact, the standpatters will be its staunchest defenders; for they are simply the friends of what is and the enemies of what is not.

We can put such people to the test (or they can put themselves to the test if they will) by a simple direct question: Instead of being asked to choose between the present gold standard and the composite standard, the former of which is in use and the latter not, let them be asked to choose between a *copper* standard and a composite standard, *neither* of which is in use. If a

contract in goods-dollars is safer than a venture in copper dollars, why is it not safer than a venture in gold dollars?

Perhaps an equally important obstacle is ignorance, or rather the lack of the requisite imagination to visualize the outrages now perpetrated by our dollar's perpetual changes and to connect the effect with the cause. If there were such a vivid realization of what is going on, both the conservatives who now deprecate any change of system and the radicals who now advocate irrelevant changes to remedy some of the evils would unite in an immediate demand for a stable dollar.

To see that this is true we only need to think what would happen if the social injustice we have discussed, now so obscure, could only be made to stand out in clear relief. Imagine a society with a stable dollar but yet with the very same injustice we now experience except that it is deliberately administered.

To make this supposition definite suppose the United States had had a stable dollar during the last few decades but had, with some strange malice, used the index number of prices in Canada or Europe (which, it is assumed, held to the old unstable system) to produce extraneously the identical evils we have actually experienced. By the caprice of the index number the debt of $1000 contracted in 1880 would have had to be paid literally by $1200 in 1896 and the debt of $1000 contracted in 1896 would have to be paid literally by only $400 in 1919. The producer would have been deprived by the operation of the supposed law of his profits before 1896 and the bondholder would have been deprived of all of his interest and part of his principal

after that date. The salaried man and wage earner would have had their salaries and wages definitely docked by the law so that the wage earner of 1919 would get only three fourths of what he got in 1913.

Such a whimsical use of an index number to defraud would of course not be tolerated for an instant. The conservative would be furious, the radical still more so; only the latter would not be devoting his efforts to sabotage, price fixing, restricting cold storage, etc. Every one would unite to stop such use of an index number to destabilize a stable standard.

Yet precisely the same reasons in precisely the same degree now justify the use of an index number to stabilize an unstable standard!

10. Precedents

Even before index numbers were dreamed of, some contracting parties have, at times when the instability of monetary units became especially intolerable, sought some partial escape. A number of instances of this sort are given in Appendix V. These include contracts in terms of foreign coin, or in terms of grain, or iron, or in terms of composites of goods. The last named includes the recent adoption by many firms and official bodies of a supplement or correction to ordinary money wages by means of an index number of the cost of living.

11. What Might Have Been

Let us stop to think what would have happened if, when resuming specie payments in 1879 (to go no further back), we and other countries had applied these principles and really standardized monetary units.

We should have escaped the billions of dollars' worth of injury from falling prices between 1879 and 1896, to farmers, independent producers, debtors, stockholders, and enterprisers generally. There were bankruptcies, foreclosures and reorganizations, and a resultant shift of control from the natural captains of industry, — often bankrupted, as we have seen, through no fault of theirs, — to the holders of mortgage bonds and the other silent partners not fitted by temperament or training to conduct industrial enterprises.

We should also have escaped the consequent convulsions of business: the crises of 1884 and 1893; the throwing out of work of armies of men; the recruiting of "Coxey's army"; the bitter feeling of the debtor-West toward the creditor-East; the growth of "populism"; the hatred of the "bloated bondholders" and the "gold bugs of Wall Street"; the futile, costly, business-depressing, free-silver agitation; and the peril of the political campaign of 1896 which, for a time, threatened us with a remedy worse than the disease.

In like manner, we should have escaped the opposite evils — those that have occurred since 1896: the rising cost of living; the loss (concealed but real) of the interest on the savings of the poor and of the real income of bondholders. We should have escaped the failure of the wage earner to secure a share of our increasing wealth; for instance, the net loss of 33% of real wages (as measured in food) between 1907 and 1917, the year we entered the war. We should have escaped the food riots all over the world. We should have escaped much of the speculation which has been so widespread; much of the muckraking agitation; much of the "I. W. W." affliction; much of the class

hatred directed against business men because of the lucky "profiteers." We should have escaped the crisis of 1907. We should have escaped many of the strikes for higher wages paralyzing our preparations for war. We should have escaped much of the embarrassment of the railroads, street railways, and other public-service industries which, with rates fixed by law, could not pay just wages to labor and, at the same time, make money or invest new capital and give the public the service it needed. Finally, while gold would still have come to us during the war, we should have escaped the inflation of prices which, under our present system, we have suffered.

It is cold comfort for the losers in this gold lottery to be told that others have won what they have lost. And it isn't even true; for, as we have seen, the confusion and uncertainty, the dislocating and shifting of the wheels of industry, have caused a general and absolute loss of wealth, in which loss the very winners in this gold lottery have, most of them, shared. Only a few have emerged with net profits and swollen fortunes, as the lucky winners of the biggest prizes; and no public-spirited man can rejoice in such unearned gains.

12. What Is in Store

We do not yet know "which way the cat will jump." If European nations make prompt preparations for resuming specie payments, there will be the same disastrous contraction in Europe that we experienced after the Civil War; and we shall feel the reflex effects of that contraction by having our hoard of gold drained back to Europe.

On the other hand, the nations may not only avoid contracting their currencies but may still further inflate them. The huge task of reconstructing Europe may lead to new issues of paper money; and it is reasonably sure that there will be new expansions of commercial loans. It is almost certain that general deposit banking, now confined almost wholly to Anglo-Saxon countries, will spread over the continent of Europe, adding billions of virtual currency to the circulating medium. As A. C. Miller of the Federal Reserve Board says: "If the League of Nations, the reduction of armaments and the like become realities, then the accumulation of hoards of gold under the impulse of national fears or ambitions must be suffered to go the way of other outworn practices"; and this fact will tend toward inflation.

There are many unknown elements — including the rearrangement of European currencies and the policy as to Government debts (whether it shall be immediate payment out of capital, slow payment out of income, repudiation, or deeper debt). No one yet knows which group of influences will prevail, — the group tending toward inflation or the group tending toward contraction. Perhaps first one group and then the other will prevail in convulsive alternation, as in a mighty battle, just as, after the outburst of war, our gold first left us and then returned, convulsing foreign exchanges. Probably few periods in history — if any — have presented so puzzling an outlook. We may make our forecasts or guesses but no man lives whose eyes can see clearly through the mist.[1]

[1] For my own guess see *The New Price Revolution*, United States Department of Labor, Information and Education Service, March, 1919.

Of one thing we may be all but sure! The price level will not stand still unless we hitch it. It never has; and now, of all times, with the vast conflicting forces ahead, we shall be foolish if we expect complete equilibrium. On the contrary, we are probably destined to see, in the next generation, important price movements, perhaps more erratic than those in the past.

The whole question of monetary standards will inevitably come up for discussion. History will repeat itself in some degree and Europe will almost certainly see a "greenback" party arise as we did after the Civil War, opposed to any return to the old price level especially as that return *will double or quadruple the cost of paying off the war loans.* The bimetallist and free-silver exponent also are once more asking a hearing. The gold producers, hard hit by the fact that their product has been made a drug on the markets (by the vast amounts of paper and credit substitute for gold), were recently asking for relief by measures which would only aggravate the situation.

I venture to predict that our present problem — of a price level dislocated by the war — will continue insistently to press for solution until it is settled. It will not settle itself. If prices rise much further — which is by no means impossible — discontent may turn to fury or revolution.

If prices fall far toward pre-war levels we shall be on the road to depression of trade, unemployment, and all those ills and grievances of twenty-five years ago.

If, by accident and contrary to all recorded experience, the price level should remain fairly constant, its right to continue so high will be long contested.

On the other hand, if once we deliberately choose a

price level after reference to an expert and impartial commission and then keep that level unchanged we shall give it a right to exist. The verdict will soon be generally accepted. Any unadjusted factors will gradually make the needed changes. Business will be rid of the handicap of uncertainty as to what the dollar is. In particular, wages will rise to recover the purchasing power lost in the losing race with the high cost of living. The sense of social grievance, so far as this is due to monetary instability, will, year by year, fade. In other words a great step forward, toward settling many of the questions which now vex the whole world, will have been taken.

13. Our After-War Opportunity

All this being the case, shall we leave our standard of value to drift, the puppet of circumstances, when we can so easily stabilize it? Are we going to let the value of our American dollar and of the billions upon billions of dollars' worth of American contracts be the shuttlecock of unknown and unknowable European policies after the war? Are we forever to be at the mercy of conditions over which we have no control?

And be it noted that the problems for Europe will be greatly simplified if, for once, a really scientific solution of the problem of money standards is reached by *one nation.*

The world is now, as never before, looking to us for leadership. It is our golden opportunity to set world standards. If we adopt a stable standard of value, it seems certain that other nations, as fast as they can straighten out their affairs and resume specie payments

and secure again stable pars of exchange, will follow our example. After gold and silver fell apart in 1873, the nations, one after another, adopted the common standard of gold; and now, after the falling asunder of all the pars of international exchange from the World War, the new order will probably be set by whatever nation first seizes the opportunity and takes the lead.

14. If We Miss the Opportunity

If we do not do this; if we do not provide a really scientific remedy; if we take the ground that we must drift with the tides of gold and credit, that we are helpless to rectify or prevent in the future the great social injustices which history warns us will surely come, as between creditor and debtor, wage earner and employer, salaried man and profit-taker, we shall be simply fertilizing the soil of public opinion for a crop of dangerous radicalism. Then surely some demagogue will flourish, and offer some ill-considered remedy which will sweep everything before it. Then shall we see, not a scientific study of a technical problem with all parties ready for an equitable settlement, but outraged justice calling for a revengeful policy and a great selfish class struggle. Discontent, unrest, suspicion, class hatred, violence, charlatanism, — all these will follow. And even if out of such unpromising soil a fairly satisfactory settlement should eventually grow, bitterness would remain; and it would remain so deeply and so tenaciously embedded in the soil that we would not be quit of it for generations.

Even if our shifting dollar were guiltless of most of the offenses charged, even if the high cost of living had

no relation to the dollar, there would still be excellent reasons for standardizing it — on the same general principle on which we have standardized all other units. Accordingly, a friend suggests that the plan be presented independently of the " cost of living " discussion, purely as a problem of weights and measures.

But the indictment will stand. The more the evidence in the case is studied, the deeper will grow the public conviction that our shifting dollar is responsible for colossal social wrongs and is all the more at fault because these wrongs are usually attributed to other causes. When the intelligent public who can apply the remedy realize that our dollar is the great pickpocket, robbing first one set of people and then another, — robbing them of billions of dollars a year, confounding business calculations, convulsing trade, stirring up discontent, fanning the flames of class hatred, perverting politics and, withal, keeping its sinister operations out of sight and unsuspected, — when, I say, the public and legislators realize this, action will one day follow ; and we shall have secured a boon for all future generations, a stable yardstick of contracts, a stabilized dollar.

APPENDIX I

TECHNICAL DETAILS

1. The Reserve against Certificates

A. Stabilizing the Dollar Would Destabilize the Present 100% Reserve. To the plan for stabilizing the dollar, as described in Chapter IV, there should be added a proviso of some kind to insure the permanent adequacy of the gold reserve.

We have a 100% Government reserve against our present gold certificates. These certificates are really warehouse receipts, issued at the rate of one dollar for every 23.22 grains of pure gold deposited, and redeemable at all times at this same rate. But, under the plan here proposed, involving, as it does, varying the weight of the gold dollar, there would cease to be an exact equality between the number of dollars of gold in the Treasury and the number of dollars of certificates outstanding. Either might exceed the other; or first one and then the other might be in excess.

Any increase of the dollar's weight decreases automatically the number of dollars in a given physical stock of bullion. A hundred ounces of pure gold contains 2067 dollars of the present weight of 23.22 grains of pure gold. But if the weight of the dollar were doubled, the 100 ounces would contain only half ($1033\frac{1}{2}$) that number of dollars. Or if, instead, the weight of the dollar were halved, the same 100 ounces would contain double (4134) that number of dollars. Thus the Treasury reserve (even if there were no variation in its physical amount) would count for more or less dollars according to what a dollar might happen to weigh from time to time.

Suppose that, at the time of adopting the stabilization plan, the Treasury bullion behind the gold certificates contained 23.22 billion grains of pure gold. This mass of gold would, at that time, count as one billion dollars of 23.22 grains each and would be represented by one billion dollars of certificates in circulation. The reserve would then be 100% of the certificates against it. But as soon as the dollar's weight were changed, this exact equality would disappear. Suppose the dollar's weight were raised 1% (from 23.22 to 23.4522 grains). Although, at the instant after this change, there would be the self-same gold in the reserve and the self-same certificates outstanding, yet the number of dollars in the reserve would no longer be a billion but about 990 millions (or exactly, 23.22 billion grains ÷ 23.4522 grains). The gold reserve would then be approximately a 99% reserve instead of a 100% reserve.

On the other hand, a reduction of the dollar's weight by 1% would increase by about 1% the number of dollars contained in a physically unchanged reserve. In this case the gold reserve would become approximately a 101% reserve!

Thus the gold dollar certificates, while they would be certificates exactly like our present gold certificates in that (so far as heretofore provided for) they come into existence only by the deposit of gold and go out of existence only by their redemption in gold, would, at the same time, be very different from our present gold certificates in that they would no longer be true warehouse receipts. Having an indefinite reserve behind them, they would partake of the nature of Government notes.

B. Restabilizing the 100% Reserve. It would, of course, be perfectly possible, although quite unnecessary, constantly to restore the reserve to 100%. When gold was depreciating it would cost the Government thus to replace the depreciation. When, on the other hand, gold was appreciating the Government would reap a profit.

If the reserve became less than the certificates it

could evidently be restored to equality either by more gold or by less certificates. The simpler method would obviously be to withdraw from circulation and *cancel the requisite number of certificates*. Thus, if there were $990,000,000 of gold reserve and $1,000,000,000 of certificates against them, the Government would simply call in and cancel $10,000,000 of certificates obtained through taxes or otherwise. In this case the Government would lose that sum.

Reversely, if the reserve should exceed the certificates, the equality could be restored either by less gold or more certificates. The latter method would be the simpler. The Government would *issue and put into circulation the requisite number of new certificates*, in making Government expenditures. Thus, if the gold reserve were $1,010,000,000 and the certificates outstanding were only $1,000,000,000, the Government would print and issue $10,000,000 of new certificates. In this case the Government would be making a profit of that amount.

Thus the circulation of certificates would be regulated, by issue or retirement, so as always to be equal to the number of dollars in the reserve. As has been stated, the issue could be through the payment by the Government to the public for expenses of any kind from time to time, and the retirement could be through the payment to the Government of taxes or other revenues from time to time.

But, as promptness of regulation is desirable, it would be best to anticipate such expenditures or receipts so as to make the issue or retirement follow immediately after the appearance of any discrepancy between the reserve and the certificates. Such immediate issue or retirement could best be effected by depositing certificates with banks or withdrawing deposits therefrom. In this way the effect of issue or retirement on the volume of money "in circulation," *i.e.* outside of Government vaults, would be immediate.

These dealings with banks would not, of course, alter

the essential fact that, in the last analysis, the retirement of certificates would be through taxes, or other revenues, while their issue would make possible a reduction in taxes.

C. The Reactions Involved Thereby. These operations of canceling old, or printing new, certificates to make the certificates even with the gold reserve would, as has been noted, be quite apart from the routine operations of redemption and issue in exchange for gold, although, of course, there would be reactions between the two sets of operations.

Thus, if gold is depreciating relatively to commodities, as shown by a tendency of the index number of commodity prices to rise, the consequences would be that: (1) the weight of the gold dollar would be increased, *i.e.* the price of gold would be reduced; (2) the deposit of gold (issue of certificates) would be discouraged, and the redemption of certificates encouraged, both operations tending to reduce the volume of certificates in circulation; (3) as the gold reserve would fall below 100%, some of the certificates in the Government's possession would be destroyed instead of being put back into circulation, thus further lessening the volume of certificates.

The third of these operations would thus reënforce the second in effecting contraction, would help bring down the rising index number to par, and would obviate, or reduce by that much, the need, at the next adjustment period, of a further increase of the dollar's weight.

If gold were appreciating, the opposite conditions would obtain, namely: (1) the dollar would be reduced in weight; (2) the deposit of gold (issue of certificates) would be encouraged and redemption discouraged; (3) new certificates would be created and issued to bring the total volume of certificates up, so as to equal the reserve. The effect of (3) would be to reënforce (2) in expanding the currency and bringing up the sinking index number; so that the need at the next

adjustment period of a further decrease of the dollar's weight would be lessened.

In short, if we thus keep the reserve constant (relatively to the certificates), we thereby lessen the variations which have to be made in the dollar's weight.[1]

D. The Definite- and the Indefinite-Reserve System Contrasted. The last sentence indicates only one of several interesting contrasts between the two forms of the stabilization system — the first, or indefinite-reserve system (described in *A* above), in which the reserve is allowed to drift, and the second, or definite-reserve system (illustrated in *B*), in which the reserve is regulated.

Under the " indefinite-reserve " system the only inflow and outflow of certificates would be through the deposit and withdrawal of gold, just as at present;

[1] It will be noted that, if gold is depreciating, the value of the gold reserve diminishes and taxation (or other financing) is required to keep it up to 100%. Under such circumstances the Government is in the position of the holder of a perishable commodity. Its gold is like ripe fruit spoiling on its hands and the Treasury suffers a loss accordingly. It taxes the public to provide for the depreciation.

The loss from gold depreciation is not, however, due to stabilizing the dollar and maintaining the reserve. The same loss, in some form, occurs whenever gold is depreciating and whether or not the dollar is stabilized. Under our present system the loss falls on the individual holder of gold certificates instead of on the Government Treasury. Every dollar of these certificates now in our pockets shrinks in purchasing power whenever gold depreciates. To stabilize the dollar simply affords a specific measure of this loss, and the operation of maintaining the reserve translates that loss into taxes.

The same principle applies to the opposite case. Under our present system, when gold appreciates every individual holder of gold certificates receives an increment of value. The gold certificates grow in value in our pockets. Under the system of a stabilized dollar, and a constant 100% reserve, the Government Treasury would reap this advantage and bestow it back on the public by lightening, by that much, the tax burden.

Thus, maintaining the reserve constant at 100% merely changes the form of the gain or loss always involved when the gold in existence varies in value. Any gain or loss, under the stabilization plan, would simply be more conspicuous than at present, entering as it would into Government accounts.

Such gain or loss must, of course, not be confused with the gains and losses of contracting parties which would be annihilated altogether by stabilization. (See Appendix II, § 1, J.)

whereas under the "definite-reserve" system there would be, in addition, an inflow and outflow of certificates through special issues or cancellations to keep the total outstanding volume of certificates in tune with the gold reserve.

Under the "indefinite" system the only regulator of the price level consists in adjusting the weight of the dollar. Under the "definite" system there is the added regulator of directly adjusting the volume of certificates.

Both regulators, however, act on the price level by influencing the volume of certificates. The indefinite system does so indirectly. Under this system, as noted in Chapter IV, §9, when the dollar's weight is decreased, *i.e.* the price of gold is increased, the deposit of gold is encouraged (as compared with what it would otherwise be) and its withdrawal comparatively discouraged, and, as we know, each deposit or withdrawal of gold implies an issue or cancellation of certificates.

In short and practically, the "indefinite" system depends for its stabilizing effect on affecting or preventing the international movements of gold which would otherwise happen, whereas the "definite" system dispenses with the need of interfering with the gold movements as they now occur.

The "indefinite" system is always subject to the risk of a breakdown, whereas the "definite" system is not. Under the "indefinite" system the reserve might sometime sink to zero and redemption become impossible, whereas under the "definite" system the adequacy of the reserve is always safeguarded.

The "definite" system would act more promptly to stabilize the price level than would the "indefinite," because, for one reason, the change in the circulation would be more prompt. The instant any change in the dollar's weight is made there is a change in the number of dollars of the reserve, and the volume of certificates is readjusted to this changed reserve immediately. Under the "indefinite" system, on the other hand, the

circulation would be affected somewhat more slowly and only as the flow of gold deposits and withdrawals became changed.

E. Stabilization in Small and Large Nations Compared. The displacement of gold caused or averted by the operation of the "indefinite" system would react on the value of gold per unit of weight. Practically, however, this effect would be negligible unless the stabilization system, in the "indefinite" form, were in almost universal use. Any one country, — at any rate, any one small country, like Switzerland, — could employ the "indefinite" system without appreciably disturbing the gold market; for any displacement of gold which such a country could cause or avert would be too trifling (in relation to the vast reservoirs of gold outside its own circulation) to affect the value, *i.e.* the purchasing power, of gold in the markets of the world.

But if a large country, — or at any rate a large number of large countries, — should adopt the stabilization system in the "indefinite" form, any change caused in the movements of gold from, or into, their circulation might be so great as to glut or drain the small outside reservoirs, *i.e.* the gold in the arts and the gold in the circulation of any countries not employing the system.

An acceleration of the movement of gold *from* the country or countries having the system or a retardation of the movement of gold *to* them, such as would be caused by an increase in weight of their monetary units, would tend sensibly to depreciate the world's gold and so require a further increase of weight of the monetary units, while the reverse tendency would have the reverse effect.

The result would be that, in the process of compensating for the tendency of prices to change by a given percentage, the dollar's weight would be eventually changed by a larger percentage than would be the case if the definite reserve system were used.

Thus, suppose the system to have been started in

1900 and consider the situation in 1915. The price level would then have been kept unchanged, but there would have been an increase of the dollar's weight of *more* than 30% although there was only a 30% rise of prices to be overcome.

F. A 50% Minimum Reserve. The maintenance of the 100% Government gold reserve, as described in "*B*," is only one of several possible solutions of the reserve problem. It is the one which would fit in with the idea implied in our present system of gold certificates, namely, the idea that the certificates are circulating proxies for gold.

But there are other ways of solving the problem. One is simply to let the reserve alone so long as it remains in excess of a specified safe minimum and to replenish it only when, if ever, it falls below that minimum, *i.e.* to keep the indefinite-reserve system until a definite-reserve system became necessary. When, if ever, the reserve should fall to that minimum, say 50%, the principles described under "*B*" for maintaining a 100% reserve would thereafter apply. If the reserve became insufficient, in other words, if, at any time, the number of dollars of certificates outstanding were in excess of double the number of dollars of reserve, the excess of certificates would be retired.

The 50% limit would be reached if, for example, the present gold reserve remained unchanged in physical amount but, after a time, the dollar's weight grew to be double what it now is.

G. How Soon Might the "Indefinite" System Reach Its Limit? The time required for such a change, should such a change ever occur, would depend, of course, on the rate of change in the dollar, following the rate of depreciation of gold. Let us take a case which is extreme for rapidity of depreciation in times of peace. Suppose that gold should depreciate at the rate it did between 1896 (the low ebb of prices) and 1914 (the coming of the Great War). During this period the price level rose in the United States at the average rate

of 2½% per year, which, let us assume, would require a yearly increase in the dollar's weight of about 2½%. From this figure we can calculate the time required to double the dollar's weight, and to reduce by half the number of dollars in a given physical reserve. This would be twenty-eight years.

This result assumes a gold reserve unchanged physically. As a matter of fact, the reserve would increase slightly. While the effect of the system would be to keep gold out of the country, this effect would stop short of *sending* it out, for that would contract the certificate circulation and, unless some special opposing cause intervened, reduce the price level. The displacement effect would stop at the point which would maintain the price level, and this, in a growing country, would admit of a slight inflow which would bring the twenty-eight years mentioned up to thirty or thirty-five.

H. A Constant 50% *Reserve and a Variable Surplus.* A third method would differ from the second, as described in " *D* " above, only from a bookkeeping point of view. There would be some advantage in separating off any surplus gold above the legal 50%. This " surplus " would then be considered as a secondary reservoir out of which the " reserve " proper could be maintained at a constant level of 50%. Reversely, whenever this " reserve " should tend to exceed 50%, the excess would overflow into the " surplus." The " reserve " proper would then be maintained at an unchanged ratio at all times.

We may, for convenience of thought, suppose the " reserve " and the " surplus " to be kept physically apart in two separate vaults in the Treasury and every week, or every day, the Treasury accounts to be squared off and gold physically transferred between the two rooms, in whichever direction it might be needed to keep the " reserve " at 50% and no more. We should then have a " reserve " the amount of which (in dollars, not weight) would always be 50% of outstanding certificates, and a "surplus" which would represent all above

50%, the percentage varying up and down owing to changes in the declared weight of the dollar as well as to the deposits of gold and the brassage receipts. Under this system of bookkeeping, the "reserve" would need to be eked out (or rather, the excess certificates would need to be retired) at the expense of the Treasury only when, if ever, the "surplus" should disappear entirely.

By this method the system would start off with a large bookkeeping profit for the Government.

I. Putting the Surplus to Work. A fourth method, and one which appeals to me as probably the best, is very similar to the third, described in "*H*," but makes more than a mere bookkeeping use of the "surplus." By putting the idle and otherwise useless "surplus" to work, a profit could be earned and the day of exhausting the "surplus" could be postponed still longer, if not indefinitely.

So far, we have supposed both the "reserve" and the "surplus" to be kept in physical gold. But only the "reserve" proper need be so kept. Part, or all, of the "surplus" representing the profit with which the system starts might be invested in, *i.e.* exchanged for, Government bonds and so virtually made to earn interest; for any bonds thus brought into the "surplus" fund would, of course, earn interest for that fund just as truly as though they were in private hands, the general fund of the Treasury paying over into that "surplus" fund the interest which would otherwise have to be paid to private holders of these bonds.

This system would recognize the needless waste involved in a 100%, or other high "reserve." In these days of economy such a "reserve" is, as one economist has said, an "expensive luxury" and one almost peculiar to the United States. In fact we are already dispensing with it, in part, by virtually converting gold certificates into Federal Reserve notes.

J. Reactions Therefrom. It should be pointed out, however, that the very operation of converting the

idle gold surplus into an active bond surplus would, theoretically at least, have its own effects on the value of gold. It might either lower or raise that value. The net effect would be the resultant of two opposite tendencies.

Of these two the tendency to lower that value will be explained first. This tendency can be clearly pictured if we follow the processes involved, step by step. These processes are best followed if pictured, not as one immediate sale of the entire gold surplus for bonds, but as a gradual sale, extending over a number of adjustment periods.

The gold thrown on the market to buy up bonds would mostly find its way out of circulation, *i.e.* go abroad or into the arts. This outflow would be indirect; for presumably the original bondholders would not wish personally to deal in the gold bullion supposed to be given them for their bonds. They would hand back this bullion to the Government in exchange for gold dollar certificates, just as though it were new gold from the mines.

The result would be substantially the same as though the bonds were bought not with gold, but with newly created certificates, the gold remaining in the surplus.

But this extra output of certificates would not remain in circulation but would disappear again and be canceled; for they would tend to raise the index number and lead to an increase of the dollar's weight, *i.e.* a decrease of the price of gold, and there would be a decreased inflow of gold from the mines and imports and an increased outflow into the arts and abroad, *i.e.* a decrease in certificates issued by the Government to miners and gold importers and an increase of certificates received by the Government from jewelers and gold importers.

The upshot is, substantially, that, while gold would not find a welcome among bondholders, it would, as gradually cheapened at successive adjustment periods, find a market abroad, or in the arts. That is, in effect, the gold displaced by the bonds, after being bandied

about between the Government, the sellers of bonds, and the gold exporters and jewelers, would go abroad or into the arts, being displaced from the "surplus" by bonds.

But, the dollar being now heavier than before, the gold "reserve" of 50% would be proportionally depleted, even assuming the physical gold in the "reserve" to remain unchanged, and so would have to be replenished from the "surplus."

In short, the original "surplus," in the process of being converted from gold into bonds, would tend to shrink in value. It would so tend to shrink both because, if the gold was forced on the market, it would have to be sold at some sacrifice and also because the resultant impairment of the "reserve" would rob some of the "surplus" before it could all be sold.

We are now ready to describe the opposite tendency by which the conversion of the gold surplus into a bond surplus would work toward a higher value of gold. The reactions so far described take no account of an important indirect effect on the price level from reducing the volume of outstanding bonds. As recent war experience has illustrated, bond issues tend toward inflation so that bond retirements would tend toward contraction. This effect would be considerable, not only because bonds are used as a basis for circulating bank notes but also because, as the most convenient form of collateral security for private loans, they are often made the basis for such loans and so for deposits subject to check. The withdrawal into the Treasury of bonds would thus tend to contract the note and deposit circulation and thereby offset, in part or in whole, the expansion from the issue of gold dollar certificates.

After the supposed initial replacement of the gold surplus by bonds, if the reserve needed replenishment from time to time, or, expressed differently, if the certificates outstanding needed to be reduced, the surplus fund would simply reconvert some of its bonds into certificates which would then be canceled up to the

point necessary to restore the 50% ratio of reserve to certificates in circulation. The maintenance of this ratio by the method here described would cease to be possible only when the surplus fund should be exhausted. It could then buy up no more certificates and recourse would need to be had to taxation, as previously explained. (See "*B*" above.)

K. The Interest on Surplus Would Save Taxes. As long as the surplus earned any interest the expense of replenishing the reserve would be borne in part, or in whole, by this interest earned. It is roughly estimated that interest earned on this surplus would extend the 35 year period, in the imaginary example mentioned under "*G*," to about 50 years. If, instead of the very high rate of 2½% per annum for the accretion of the dollar's weight, we were to assume a 1½% per annum rate, which would itself be a high rate, the net result of the calculation, under the same assumptions, is that the investment of the surplus would about meet the loss indefinitely. In this case the "indefinite" system would last indefinitely and require no taxation.

L. The Future. These calculations are, of course, purely illustrative. No one can guarantee, for instance, that great gold depreciation is not in store for us from extraneous sources.

If this depreciation should be so rapid as to make the cost to the Government of stabilization a matter of real moment, — if, for instance, science should find a way to extract profitably the enormous amounts of gold now held in the southern clays, or in sea water, or in the alluvial deposits said to be at the mouth of the Sacramento River, — then the time would clearly have arrived for dispensing with the gold standard altogether, just as we would dispense with a standard based on decaying fruit and adopt something more retentive of value.

At any rate, the expense to the Government of such a future possible cataclysm is no argument against stabilization; for, as we have seen, if depreciation

comes, its cost must be borne by the people anyway, whether the dollar is stabilized or not. The argument is rather the other way; for the private individual ought not to be forced to take a gamble as to the value of the money he carries any more than as to the variations of any other unit.

Instead of taking such drastic action as to give up the gold standard, we could, if we chose, make gold itself less perishable in value by limiting its production, just as diamond mines limit the production of diamonds in order to maintain their value. Such a control of gold production would simplify the problem of stabilization; for it would be a partial stabilization itself. It would be the first rough adjustment, by hand as it were, of a scientific instrument, made in advance of the finer adjustments by means of a micrometer, — *i.e.* the index number.

If, on the other hand, gold should, without any Government interference, become scarce and appreciate, the monetary system would be earning a handsome profit for the Government.

M. Summary. Each change in the dollar's weight changes the number of gold dollars in the reserve and disturbs the ratio of reserve to certificates.

If gold appreciates, or does not depreciate too far, the reserve will always be adequate to insure redemption. But as there is always the possibility of an excessive depreciation of gold, some method of insuring an adequate reserve should be provided. Of several possible methods, the best seems to be: to fix a definite ratio of reserve to certificates, such as 50%, which shall always be maintained; to appropriate at the outset, to the profit of the Government, all surplus above the 50% and invest it in Government bonds; likewise, in the future, to appropriate, to the profit of the Government, any further surplus which may accrue and to defray, at Government cost, any expense involved in bringing the reserve up to the 50% limit.

These Government gains and losses are not new but

merely transformed. They are the same gains and losses which, under our present system, are felt by the public as individuals.

The maintenance of a definite ratio of reserve to certificates compels both of them to expand or contract in unison and leaves the currents of gold between countries and between the arts and the currency substantially as they are at present.

An " indefinite " reserve system would disturb those currents somewhat, mitigating a flood of gold into the country or an ebb of gold out of it, and, if the country be a large one, affecting the value of gold.

2. Speculation in Gold

A. Preventing " Overnight " Speculation. The best " brassage " fee. In the text (Chapter IV, § 10) it was briefly stated that a small fee should be charged by the Government for the deposit of gold.[1] This fee would correspond somewhat to the old " brassage " charge for coinage and may, for convenience, be so called. Its object, however, is not primarily to defray the expense of the mint office but to prevent speculation in gold, injurious to the Government.

Without some such safeguard the Government

[1] The weight of the gold bullion dollar, at any time, may be called the *redemption*-weight of gold, *i.e.* the weight of gold in which a gold bullion dollar certificate can be redeemed. The amount of gold which must be deposited at any time for a gold bullion dollar certificate may be called the *deposit*-weight of gold (corresponding to the present mint-weight). This exceeds the redemption-weight (*i.e.* the "dollar") by the brassage fee. If this fee be 1%, reckoned on the dollar's weight, and the dollar's weight (in pure gold) were 23.22 grains as at present, this fee would be .2322 grains. Hence the depositor of gold, in order to receive a dollar of certificates, would have to deposit not only a dollar of gold bullion (23.22 grains) but a " brassage " fee of .2322 grains besides, or 23.4522 grains in all. In other words, while the *redemption*-price would be $20.67 an ounce (*i.e.* 480 grains in an ounce ÷ 23.22 grains in a dollar) the depositor of gold would receive a *deposit*-price (corresponding to the present mint-price) not of $20.67 an ounce, but of 480 ÷ 23.4322 or $20.47. Under this system of terminology the dollar and the official price of gold are defined in terms of redemption, not of deposit, which latter involves the brassage fee as well.

would be in danger of sustaining loss every time a prospective change of the dollar's weight and the price of gold was known. For instance, if, at any time, the Government stood ready to buy or sell gold at, say, $20.00 per ounce and if it were known that to-morrow that price would be raised to $20.10, speculators could to-day buy, of the Government, gold bullion at $20.00 and sell it back to-morrow at $20.10, thus pocketing a profit of 10 cents an ounce overnight at the expense of the Government. Were this operation allowed or made possible, it would be costly to the Government Treasury and might temporarily deplete its gold reserve.

The opposite speculation would, were it not prevented, accompany a drop in the official price. Speculators who possessed stocks of gold could conceivably sell to the Government to-day at, say, $18.00 and buy back to-morrow at $17.90, likewise profiting 10 cents an ounce at the expense of the Government. This last operation would also be costly to the Government, though it would (during the period of operation) increase its gold reserve.

But the "brassage" requirement would effectually protect the Government from either sort of speculation. The Treasury would be put thereby in the usual position of any merchant or broker, charging, at any time, a slightly higher price than it pays at that time and making a profit. This profit, or brassage, would be the Government's fee for its services in maintaining the monetary system. Wedged between the two Government prices, it would remain a fixed percentage, say, 1%, so that the pair of prices would rise or fall together.

In order that this margin should always fully safeguard the Government it should be provided in the plan that the extent of any one shift in the pair of prices, whether that shift be upward or downward, must never exceed the margin or brassage fee. Thus, if the fee is 1%, no one shift could be more than 1%.

Evidently such a limitation would effectually stop any embarrassing speculation. Thus suppose the fee to be 1% on the Government's deposit — or buying — price, which to-day is, say, $18.00. Then the pair of Government prices, to-day, will be:

For buying gold	$18.00
For selling gold	18.18

Suppose that to-morrow both prices are to be raised 17 cents, almost to the limit of 1%, or so as to be:

For buying gold	$18.17
For selling gold	18.35

Clearly a speculator who tried to profit on the rising market would fail; for he would have to give to-day $18.18 and would get to-morrow only $18.17, actually losing 1 cent an ounce. Evidently, at best (*i.e.* if the shift were not 17 but the full 1%, or 18 cents), he would come out only even.

Reversely, if the pair of Government prices are marked down nearly to the limit, say, by 16 cents, or from

a buying price of $18.00
and a selling price of 18.18

to

a buying price of $17.84
and a selling price of 18.02,

clearly the speculator cannot profit by the fall. To attempt it would mean to let the Government buy his gold to-day at $18.00 and sell it back to him to-morrow at $18.02, causing him actually to lose two cents an ounce. Evidently at best (*i.e.* if the shift were not 16 cents but the full 1%, or 18 cents) he would come out only even.

It is true that this limitation imposed on the shift, up or down, of the pair of official prices, while it would

effectually stop injurious speculation, might, in some cases and for the time being, prevent the full adjustment in the dollar's weight (and in the price of gold) called for by the index number.

Thus the index number might indicate a change of 2% in gold prices, while only 1% was permitted under the restriction mentioned. Suppose the redemption-price of gold to be $18.00 and the deposit-price 1% less, or $17.82. Suppose, further, the index number at some adjustment period to be found to be 2% above par. Then, it is true, the price of gold could not be changed more than 1%, or 18 cents. Instead of being reduced the full 2%, or 36 cents, as would be the case if there were no restriction, the redemption price would, on account of the 1% restriction, only be reduced from $18.00 to $17.82 (instead of to $17.64) and the deposit price from $17.82 to $17.64 (instead of to $17.46).

The sacrifice in efficiency of the system here implied is, however, insignificant,[1] assuming, of course, that the fee or margin is wisely chosen in reference to the adjustment period. And even if the sacrifice of efficiency were greater, the superiority of a merely partial adjustment over the present unyielding system of no adjustment at all would be very great.

If the adjustment is to occur monthly, or bi-monthly, a brassage of 1% would seldom hamper stabilization appreciably; if quarterly, 2% might better be used, as giving more latitude. I incline, however, toward a bi-monthly adjustment period and a 1% fee, the prices being quoted, let us say, for the first Wednesday of January and of every alternate month and the resultant index number proclaimed and made effective on the Wednesday following or earlier. Calculations with a 1% fee applied to the actual prices of 1900–1914 seem to justify this choice.

B. Speculation beyond One Adjustment Period. The only kind of speculation thus far considered is the "overnight" variety based on a foreknown change in

[1] This is shown in figures in § 9 below.

the Government prices of gold; and this is the only kind against which any safeguard is necessary.

We may, however, add here a short statement as to other kinds of speculation in gold, in order, chiefly, to show that no provision against them is needed. It is conceivable that a speculator might buy (or sell) gold to-day in order to resell to (or to rebuy of) the Government after, not the next, but some succeeding adjustment. Assume, for simplicity, that the adjustment is monthly and limited to a 1% increase or decrease. While the brassage fee of 1% would effectually prevent a speculator from buying (or selling) in January in order to resell or rebuy in February, it would not prevent him from an operation extending from January to March or later months in the hope that the first shift of gold prices, — that, say, on February 1, — might be followed by others in the same direction.

First consider bull operations. Thus, if the Government is buying gold on January 31 at $20.00 an ounce and selling it at 1% more, or $20.20, and if the speculator knows that on the following day, February 1, this pair of prices will be advanced the full limit of 1% and *hopes* that on March 1 it will be advanced another 1%, while it is true that he could make no profit by selling in February, he could, evidently, if his highest hope were realized, make a 1% profit by selling in March, and he may, if he chooses to take the risk involved, speculate in that hope. That is, he *may* buy gold of the Government in January, planning to resell it to the Government in March or later, the minimum period for the turnover being a month and a day.

But will he? Seldom, if ever, and for several reasons! In the first place, opportunities for such gain will be few and far between. The maximum gain possible will be 1% a month and that maximum will seldom continue. So far as statistics are available to tell us, gold has very seldom appreciated for a year more than 5% and never as much as 10% (except once in greenback days when gold was not the standard).

In the second place, against these small possible gains which might present themselves from time to time, the speculator would have to reckon with large, if not prohibitive, expenses. Prominent among them would be interest. If the rise per cent in the price of gold is less than the rate of interest he will be a loser anyway. If he has to pay 5% for " carrying " his load through the year and, at the end, the price of gold has risen 5%, he has not even earned interest. For when he closes his operation and sells gold back to the Government, the brassage charge of 1% must be paid, and besides these two expenses are expenses for cartage of the gold from the Government vaults and back, storage charges in the interim, and insurance.

Another obstacle is the difficulty of assembling the yellowbacks necessary to begin such a bull operation. If they are kept ready in advance, the interest expense involved in " carrying " them would be much more than merely the interest for the period of the speculative operation.

Finally, of course, the risk of failure in such an operation has always to be reckoned with. The only case in which such speculation would be reasonably likely to succeed would be when, in any month, the 1% rise in the price of gold were inadequate completely to meet the fall of the index number, so as to create the presumption that it, the price of gold, would be raised again in the following month. If a rise of 1% were announced for February 1, which was several per cent less than the fall in the index number, there would be a high probability that a month-and-a-day bull operation would yield a gross profit of 1%, the net profit, if any, being what is left of that 1% after deduction of expenses. But this is scarcely an attractive speculative proposition.

We conclude: (1) that for *short* periods, like two or three months, the *expenses*, — *e.g.* the expense for the cartage of gold away from and back to the Government vaults and the expense, time, and labor of preparation

in order suddenly to assemble the yellowbacks (or else to "carry" them for long beforehand), would be prohibitive; and (2) that for *long* periods, like a year, the *risk* would be prohibitive. It is clear, then, that speculation of the sort here discussed would be conspicuous by its absence.

The effect of any such speculation, so far as it did exist, would, of course, be to cause expense to the Government or rather deprive it of the profit it would have made if the gold which the speculator held for a rise had been held by itself; the temporary withdrawal of gold from the Government reserve should also perhaps be counted as a slight disadvantage to the Government.

But this is only a small part of the picture. As we have seen in the previous section, the Government, during such a period of gold appreciation as we have supposed, would itself be in the very position of the bull speculator and on an immeasurably larger scale. It would, as it were, be holding for a rise its entire gold reserve. Its percentage of reserve would be gaining and might, conceivably, even grow to exceed a 100% reserve. The speculator's losses, if any, would therefore simply be a negligible offset against the Government's own gains from the rising tide of gold value.[1]

[1] If the view which has been given (that such bull speculation would be too trifling to require any special provisions against it) were incorrect, — if, after all, the Government might be seriously embarrassed, — such a raid on the Treasury could be altogether avoided by a special proviso: the price of gold could be further restricted, so far as any *upward* change is concerned, so as not to be raised more than, say, one half of one per cent a month, *i.e.* at so small a rate, at most, as to be more than offset by the interest, etc., which the bull speculator would have to carry.

This restriction would only slightly hamper the stabilizing process; for it is only seldom, and never for long periods, that gold has appreciated relatively to goods more than one half of one per cent a month. This safeguard is mentioned, however, merely to meet completely all possible objections, however far-fetched or imaginary. Such a proviso would, I believe, be as superfluous as it would be innocuous.

If, as I suggested in "A" above, the brassage were 1% and the adjustment period two months the terms of the restriction just mentioned would be met anyway.

But let us return to the contention that such bull speculation would be practically non-existent. The price movements needed for it seldom occur, and when they do occur are not foreseen. In fact, if price movements were so well foreseen, the evils which this book proposes to remedy would not be very serious!

Somewhat the same considerations apply to the opposite sort of speculation, that of the bear operator. But this type of operation, — first selling gold to the Government and then buying it back at a lower price some months later, — would amount to lending the Government temporarily an addition to its gold reserve. It would be helping the reserve when, because of its depreciation in value, it would need help. Practically, the advantage to the Government from such an operation would be small; for the possible bear operations would be limited to very small dimensions by the fact that only small amounts of idle gold bullion are available, *i.e.* could be, at any moment, found in stock outside the Treasury and so be capable of being immediately deposited there for the period of the supposed bear operation.

C. Unofficial Prices of Gold. We have spoken only of the official pair of prices of gold. These are like the two "gold points" in foreign exchange or the two limits used in the gold exchange standard. As distinct from these two official Government prices of gold bullion, the actual price in the open market might be at any point within these two limits, just as the price of foreign exchange may be any price within the "gold points."

The market price could never lie outside these limits. It could never exceed the redemption-price; for no one would pay more for gold than the price asked by the Government. Nor could it fall below the deposit-price; for no one would take less for his gold than he could get for it from the Government.

But, within the range set by these two official prices, the market price could float unhampered. Thus,

if the limiting, or official, prices were $18.00 and $18.18, the market price might be $18.10. There would, so long as this intermediate price ruled in the market, be no actual redeeming or depositing. For no one would sell bullion to the Government for $18.00 an ounce when he could get $18.10 in the open market, nor would any one buy bullion of the Government for $18.18 an ounce when he only needs to pay $18.10 for it in the open market.

Evidently, therefore, the deposit of gold would only take place when the deposit-price, *i.e.* the lower limit, ruled the market; and its redemption would only take place when the redemption-price, *i.e.* the upper limit, ruled the market. The buying and selling of gold within the two official price limits would thus not directly concern the Government.

D. Conclusion. Our main conclusion is that speculation in gold, whether or not the Government be involved as a buyer or seller, would, if the brassage safeguard be used, not embarrass the Government finances nor affect the smooth working of the plan for stabilizing the dollar. Moreover, such speculation would be negligible, probably more so than speculation in silver to-day.

3. Selection of the Index Number

The method of stabilizing the dollar set forth in this book consists in periodically readjusting the weight of the gold dollar so as to make its purchasing power correspond to an ideal composite dollar of commodities. The criterion for this adjustment is an index number of prices. Consequently the selection of the right type of index number is one of the essential details of the plan.

Many different methods of averaging and of weighting and many different selections of commodities, sources, and periods of price quotations have been used or suggested, making many sorts of index numbers.

The selection of the best index number is a fascinating subject. It is a curious fact, however, that index numbers of different types usually agree with each other remarkably well, whatever the formula for calculation, the method of weighting, the number of commodities, etc.

In Chapter I some diagrams illustrating this important fact were given. Any reader unconvinced as to the correctness of this conclusion has only to consult the literature on the subject indicated in Appendix VI (especially the writings of Mitchell and Edgeworth) in order to be reassured.

Nevertheless, there are always some differences between the movements of different index numbers, and occasionally these differences are large. Therefore, just as, in determining the physical yardstick, it is worth while to eliminate the effects of temperature and other disturbing factors in order to obtain a unit as nearly perfect as practicable, so it is worth while to construct an index number as nearly perfect as possible.

I shall therefore indicate the points which seem to me of most importance.

The chief factors of an index number are: (1) the agency authorized to calculate the index number; (2) the markets and sources of quotations; (3) the kinds of prices (*i.e.* wholesale or retail, etc.) to be quoted; (4) the list of goods to be included; (5) the frequency of calculation; (6) the formula for calculation.

Out of the wide range of choice presented under each of these six heads I would, tentatively at least, make my own choices as follows:

(1) The calculation of the index number might well be put in the hands of the Bureau of Standards which now has charge of standardizing every unit other than the money unit. An alternative is the Bureau of Labor Statistics which now publishes excellent index numbers of prices for other purposes.

(2) The markets should be the chief public markets

of the United States such as those now used by the United States Bureau of Labor Statistics; and the sources, government agents, standard trade journals, and books of business houses.

(3) Only wholesale prices should, I think, be used. We could not profitably use retail prices or prices of labor (wages) or the prices of securities or the prices of real estate or rents.

There are several reasons for the restriction to wholesale commodity prices, especially: (*a*) the greater ease of fixing or standardizing definite grades of wholesale commodities than of any of the other classes of goods mentioned; (*b*) the greater importance of wholesale trade and the fact that most important contracting parties are more concerned with wholesale prices than with retail; (*c*) the greater sensitiveness of wholesale prices to the influences which affect price levels; (*d*) the fact that stabilization of the wholesale index number will carry with it the stabilization of the level of retail prices far more promptly and fully than *vice versa*.

The last two points are worth a little elaboration. It is well known that certain prices are sensitive and others insensitive to the various market influences. For instance, the wholesale price of silver is so responsive to every market wind which blows that rarely are the quotations on two successive days alike; while, on the other hand, street railway fares have only begun to budge from the traditional five cents after having stood stock still through more than two decades of upheaval of prices of most other goods and services. As our index number is designed to register promptly the effects of an increase or decrease of money in circulation, an index number made up of prices, almost unchangeable like street railway fares and the price of postage stamps, would be, to that extent, like a painted clock, a false and useless indicator.

In short, the prompter the indications for needed adjustments, the prompter the adjustments, and

the history of prices has repeatedly and clearly shown that wholesale prices respond the most promptly of all classes of commodity prices. They rise or fall before retail prices, just as retail prices do before wages, and wages before salaries.

Not only are wholesale prices a prompter and better index of the purchasing power of money but, if the level of wholesale prices is stabilized, the level of retail prices will be stabilized also. It is true that when the wholesale level changes the retail level lags behind. But *the lag depends on the change;* that is, other things equal the lag is most, absolutely at least, when the change in wholesale prices is most and least when that change is slowest. If the level of wholesale prices did not change at all the level of retail prices would likewise keep fairly stable; for there can be no lagging behind when there is no movement behind which to lag. When a fisherman moves his pole back and forth, the line and sinker follow, lagging behind. But if he ceases to move the pole, the line will hang more nearly plumb.

(4) What has just been said paves the way for the selection of the particular commodities to be included. Just as prices of commodities at wholesale are more sensitive or responsive than those at retail, so some wholesale prices are more responsive than others. In other words, for one reason or another, the prices of certain commodities, even at wholesale, are more or less resistive to change, *i.e.* they change only sluggishly and after the pressure to change them has accumulated. Steel rails, for instance, remained $28 a ton for many years.

With these requirements in mind, the next consideration is that the list of commodities be as general as possible. I would myself prefer a more general standard than food, although almost any standard based on a number of commodities would be superior to the gold standard based on one alone. If a very general standard were adopted, it is quite true that the

" cost of living " in any restricted sense (such as the cost of food alone) could change somewhat, though not greatly. Furthermore an index number must serve not simply the purpose of stabilizing the value of money to wage earners but serve the purposes of transactions generally. For a large share of those transactions, a general wholesale index number is the best.

I have had a special index number calculated for me through Mr. Bell of the United States Bureau of Labor Statistics, derived from the same data and calculated by the same methods as those used by the Bureau but excluding the articles sluggishly changing, *i.e.* most frequently remaining unchanged in successive months. The resulting index number is, therefore, presumably more promptly responsive to any influences affecting it than any other index number of wholesale prices which has been constructed. The list of commodities on which it is based includes 75 commodities and 155 series of price quotations as follows:

Farm Products
- Cotton
- Flaxseed
- Grain
  - Barley
  - Corn
  - Oats
  - Wheat
- Hides

Food
- Beans
- Butter
- Coffee
- Eggs
- Flour
  - Rye
  - Wheat
- Glucose
- Lard
- Meal, corn
- Meat
  - Bacon
  - Beef
  - Lamb
- Milk
- Molasses
- Sugar
- Tea
- Vinegar

Cloths and clothing
- Boots and shoes
- Carpets
- Cotton flannels
- Cotton yarns
- Denims
- Drillings
- Ginghams
- Leather
- Linen shoe thread
- Print cloths
- Sheetings
- Shirtings
- Silk
- Tickings
- Women's dress goods
- Wool

Fuel and lighting
- Alcohol
- Coal
- Coke
- Petroleum

Metals and metal products
- Bar iron
- Copper
- Lead, pig
- Lead pipe
- Nails
- Pig iron
- Silver
- Steel { Billets, Bessemer / Structural
- Tin
- Zinc

Lumber and building materials
- Brick
- Lime
- Paint materials { Lead, carbonate of / Linseed oil / Turpentine / Zinc, oxide of
- Shingles

Drugs and chemicals
- Alcohol
- Alum
- Glycerin
- Opium
- Quinine

Miscellaneous
- Cottonseed meal
- Cottonseed oil
- Jute
- Paper
- Rope
- Rubber
- Soap
- Starch

(5) The frequency of calculating the index number, which means the frequency of adjusting the dollar's weight, depends on a number of circumstances, including the time required to calculate the index number and that required for the effect of each adjustment to be felt.

The time required for calculation should be trifling. Judging from the expeditiousness with which some of the commercial index numbers are now calculated, and with which our Government weather maps are published, I believe that, with the aid of the telegraph, an index number could easily be calculated within two or three days after the date for which the prices are quoted.

How quickly the index number responds to a change in the money supply has never been fully demonstrated. Professor J. Shield Nicholson, plotting English war currency and index numbers of prices at quarterly intervals, found that the behavior of the price level seemed to correspond to that of the cur-

rency in the previous quarter rather than to that in the same quarter, thus suggesting a lag between cause and effect of one quarter of a year. His figures did not admit of a closer analysis. A lag about half as great seems to exist in the United States between the changes in the money in circulation (*i.e.* in pockets, tills, and banks other than Federal Reserve Banks) and the index numbers of Dun or Bradstreet or the United States Bureau of Labor Statistics.

The specially responsive index number which I have had calculated seems to show a still shorter lag, namely, about one month. Perhaps the most sudden and unmistakable single instance of a right-about-face of prices succeeding that of money is that in the autumn of 1915. In August of that year the money in the United States shot up suddenly and rapidly. In September, one month later, the price level likewise shot up suddenly and rapidly and has scarcely receded since. The lag is here one month.

It is interesting to note some other cases sufficiently analogous to be illuminating on this point. The closure of the Indian mints in 1893 showed the same promptness of influence on the value of the rupee.[1] The rate of exchange on London in New York has often changed from the maximum to the minimum inside of a fortnight. Again, Canadian and American price levels, as worked out by the labor bureaus of the two countries, correspond with each other year by year with extreme precision. Even month by month, judging by a careful comparison for twenty-four months, the agreement is very noticeable. The price levels of different countries tend to approximate each other like two connected lakes, through the overflow of currency from one to the other, back and forth. That

[1] See, *e.g.*, tables of silver and rupees in relation to gold in *Financial and Commercial Statistics for British India*, Calcutta, 1895, p. 353. After the closure of the mints in June, 1893, the first figures available, which were dated about a month and a half after that event, show a marked appreciation of the rupee.

the adjustment should be so delicate and prompt as between countries whose centers average hundreds of miles apart and whose trade currents are obstructed by high tariffs is not only surprising but extremely significant.

If this estimate of a month and a half be near the truth, a monthly or, at most, a bi-monthly adjustment of the index number would usually give sufficient time for any adjustment to make itself felt in the index number before the next adjustment was made.

Some such period of waiting for the effect of one adjustment to work itself out before another adjustment is made is advisable so as to avoid, as far as possible, occasional cases in which the new adjustment might prove to have been in the wrong direction and need to be recorrected later.

(6) In my book, the *Purchasing Power of Money* (Chapter X and Appendix to Chapter X), I have discussed at length the question of the best formula for calculating an index number. The merits of forty-four formulæ are there considered. On the whole, I favor a weighted arithmetical average like that adopted by Dr. Meeker, Commissioner of Labor Statistics, and used in the index number of the Bureau of Labor Statistics. This system was used in calculating the special index number of " responsive " commodities to which I have already referred.

As this last-named index number is the one I would, at present, most favor, it is given on the opposite page and the regular index number of the Bureau of Labor Statistics is given for comparison.

4. Selection of the Par

We may distinguish three classes of contracts, past, present, and future, *i.e.* those both made and fulfilled in the past, those made in the past but to be fulfilled in the future, and those to be both made and fulfilled in

	INDEX NUMBER OF RESPONSIVE COMMODITIES 1913 = 100	INDEX NUMBER OF BUREAU OF LABOR STATISTICS 1913 = 100
January 1913	101.57	99.33
March	99.65	99.32
May	98.52	98.34
July	99.28	100.53
September	102.74	102.18
November	103.51	101.04
January 1914	100.74	99.53
March	99.18	98.92
May	97.17	97.79
July	96.47	99.17
September	102.43	102.90
November	98.24	97.70
January 1915	101.13	98.02
March	102.57	98.69
May	103.93	100.32
July	102.11	100.51
September	99.57	98.47
November	106.26	102.36
January 1916	114.47	109.75
March	115.96	113.58
May	119.50	117.77
July	119.37	118.75
September	130.48	126.94
November	149.47	142.88
January 1917	156.09	149.75
March	163.28	159.77
May	192.52	180.62
July	199.47	184.96
September	196.46	181.69
November	197.44	182.22
January 1918	206.14	185.41
March	207.48	187.45
May	201.71	190.71
July	209.94	198.12
September	223.21	206.65
November	217.16	206.14
January 1919	213.02	202.01
March	198.40	200.45
May	214.19	206.55
July	229.83	216.37
September		
November		

the future. In the start-off, *i.e.* in the selection of the par or price level which the new system would undertake to maintain, only the middle of these three groups need be considered.

It is true that the chief purpose of the new plan is to provide for the third class, *future* contracts; for these include the numberless contracts of generations yet unborn. But for this purpose any price level whatever would serve for the par as well as any other, even if it were ten times as high or as low as the present price level.

Nor do the contracts of the past concern us. They have been written off the books and are beyond recall or correction. Nor can those who suffered losses or made gains on past contracts be selected out and indemnified or assessed damages to-day. And, if these past victims could be found, the adjustments they would require could not be accomplished by selecting any particular price level such as that existing at some particular date in the past. A reversion to standards from which we have drifted far will only make bad matters worse. Two wrongs do not make a right. Bygones must be bygones.

To urge going back to an antiquated price level was a fatal mistake in the 16 to 1 proposal in the '90s which aimed to go back to the "dollar of the daddies" and the price level of 1873.

To-day those who talk of pre-war prices as "normal" might almost as well talk of the price of 1896 as "normal." They do not stop to think that most of the adjustments have been made nor of the injustice which a reversion to an obsolete standard would do to the contracts of the present.

The war debts both in this country and in Europe, for instance, have been, for the most part, contracted at high price levels. If we should drop back to the 1913 level of prices it would almost double the burden of our national debt, for the government would have to repay dollars almost twice as big in purchasing

power as the average of those which it borrowed at the five Liberty Loan dates.[1]

In considering Europe's burden of debt we must remember the unacknowledged premium on gold and the grave circumstance, of similar significance, that the price upheaval in Europe was even more serious, far more serious, than with us.

In the absence of any more exact estimate let us assume that the average price level in western Europe is threefold that of 1913 while ours is only twofold.

Conformable to this situation we may further assume that to resume specie payments and get back to and maintain the old pars of exchange, European price levels must drop *relatively to ours* by about one third; for, if our present price level be maintained, Europe's would have to fall in the ratio of 3 to 2.

This means that the purchasing power of her money must appreciate in the ratio of 2 to 3. Such an appreciation would alone add 50% to Europe's burden of debt as compared with what it is at present prices.

Now, if we in America insist on reverting to our pre-war level — if, that is, we double the present purchasing power of our dollar, Europe's price level, in order to get back to the normal relation to ours, must be cut in three and her war debt virtually tripled. Even without war debts Europe would be ruined economically if her money units were thus tripled in purchasing power within a generation. Even an enhancement of 50% would be almost unbearable and would probably fan social discontent into revolution. To see that this is a grim fact we need only to recall how be-

[1] The average index number at the five dates was 195 (on the basis of 100 for 1913), calculated as follows:

1st	Liberty Loan June 1917	index number	184 × 2.0 billion	= 368
2d	Liberty Loan Nov. 1917	index number	182 × 3.6 billion	= 655
3d	Liberty Loan May 1918	index number	191 × 4.1 billion	= 783
4th	Liberty Loan Oct. 1918	index number	204 × 7.0 billion	= 1428
5th	Liberty Loan May 1919	index number	200 × 5.3 billion	= 1060
		weighted average index number	195 × 22 billion	= 4294

tween 1873 and 1896 business men and farmers in America struggled to swim against the ebbing tide of prices. Yet our burden of debt was negligible compared with Europe's to-day, we were not as economically exhausted as Europe is, and the fall of prices was not so great as that we are assuming.

Under these circumstances we may well ask: Is it reasonable to expect Europe to drop her price level back to the old relation to ours or should it not be fixed at some intermediate level?

If the latter course is to be adopted so that the old relations between the various national price levels are not to be resumed and the old pars of exchange not to be reëstablished, the stabilization plan as proposed in this book would afford the appropriate method for maintaining a new set of levels. For we can, by reducing the weight of European gold coins relatively to ours, enable each European nation to adopt its own price level at any desired point. If, on the other hand, we rehabilitate the old units, European price levels must go through a painful fall relatively to ours.

As to individual debts, we long ago abandoned, as impractical, the theory that a bankrupt must pay the uttermost farthing or go to prison. If there ever was a time when the modern theory of treating bankrupts should be extended to nations it is now. In fact we have already applied it to fixing the indemnity of Germany according to her ability to pay rather than according to the damage she did.

Similar considerations apply to the reconstruction loans we are making to Europe. If after loaning, in the near future, billions of dollars to Europe we double the purchasing power of the dollar, we are not only putting ourselves in the position of an unjust (and much to be hated) Shylock but the pound of flesh we would thus exact of Europe would drain her life blood and weaken her usefulness to us as a customer. The sound policy, which we are now adopting, of giving Europe long and easy credits should be carried out in fact as well as in

name and this implies that we should not permit any undue appreciation of our dollar.

For various reasons, therefore, in starting the new and permanent level of prices, we cannot, very well, advocate any drastic departure from the level at which we happen to be when the start is made. In short, we ought not to start with a serious jar.

This does not mean that we must adopt the exact level of the moment.

We must take care to do justice as between the then existing debtors and creditors. To these particular debtors and creditors this question of the start-off is vital.

We cannot now say, of course, what the price level will be when the new system shall begin. All that can now be done toward deciding what the start-off should then be, *i.e.* what par or particular price level is thereafter to be maintained, is to point out the principles which should guide us.

If the time of adoption of the plan should happen to come after a long steep rise of prices, such as in 1919, 1873, 1865, or 1814, it is clear that the price level then existing would be too high to afford a just and proper starting point and that a somewhat lower level ought to be selected to which we should deliberately descend. Otherwise most outstanding debts would have to be paid in terms of a dollar of less value than the dollar contemplated when the debts were contracted, before prices were so high.

On the other hand, if the time of adoption of the plan should happen to come after a long steep fall of prices, such as in 1896, 1849, or 1821, the price level then existing would be too low to afford a just and proper starting point and a somewhat higher level ought to be selected to which we should deliberately ascend. Otherwise most outstanding debts would have to be paid in terms of a dollar of greater value than that contemplated when the debts were contracted, before prices were so low.

But in such cases of a rapidly changing price level, with existing contracts originating at many different previous levels, it is impossible to select any one price level well adapted to them all. If we are to apply a single correction to them all, it must be an average. We must cut our Gordian knots as we did when we resumed specie payments after the Civil War and as we always have to do in readjusting monetary standards. To strike such an average, the price level selected should, I believe, extend back of the moment when the system starts to the center of gravity, as it were, of the outstanding contracts and understandings now in existence which would be affected by the new law.

We can strike this proposed rough average of justice by making a calculation as to the past duration of existing contracts of different kinds. The contracts to pay money are the important factors to be considered. I have made a very rough estimate, largely a guess, of the *average duration* of the existing indebtedness which would be affected, — railroad bonds, mortgages, bank loans, and other obligations, — which seems to indicate that it is one year, or in that neighborhood.

When the proper time comes, a judicial commission to make a special intensive expert investigation of outstanding contracts might be created and the start-off then fixed in the light of the facts found, and of common sense.

If the average thus selected should effect substantial justice — which implies that this recent average price level is not far from the price level at the moment the system is launched, nor far from the price level for any other moment during the past year at least, — nothing more need be done to secure justice on existing contracts.

But if the case is otherwise — if, for instance, the average price level as calculated should differ say by more than 5% or 10% from that of any date within a year previous to the launching of the new plan, we might perhaps better give up the idea of making a single

average correction to apply to outstanding contracts. Instead, special legislation "scaling" or adjusting debts might be adopted, as was sometimes done in the case of Colonial paper money. If this solution were chosen the price level for the start-off need not be changed at all from the level then existing.

Under any ordinary circumstances the price level does not vary more than 5% in a year. Probably by the time the plan could go into force the present, or recent, troubled course of prices may be sufficiently tranquilized as not to require any special legislation for scaling debts nor to afford much discrepancy between the then existing price level and the average price level for a preceding period of several months at least.

Such a debt-scaling law is, of course, not involved in the proposal to stabilize the dollar. In fact, if debt-scaling is really needed after stabilization it is far more needed without it and not once only but at many times.

But once the Gordian knot is cut and the new price level is steadily maintained, all elements still unadjusted would gradually become adjusted — wages, salaries, rents, railway rates, etc. In the long run it will be better to adjust these laggards to the price level than to adjust the price level to them. Even labor discontent would, I believe, be more successfully combated to-day by a rise of wages *without a rise of the cost of living* than by the reverse adjustment.

5. What Shall Be Done with Existing Gold Coins

The question is sometimes asked: How are existing gold coins to be retired, as they are assumed to be in Chapter IV? The answer is: by putting a premium on the retirement of the coins or a penalty on their retention, or both. To retire the Philippine peso (and replace it by another of less weight) a slight premium was offered to holders of the old coin up to a specified date, after which the coin was not to be received by the government except at a discount.

It may be worth mentioning that neither the retirement of existing gold coins nor the cessation of their coinage in future need be insisted upon. By a slight modification of the plan, we could permit gold coins and coinage to continue. In fact in the formulations of the plan which I usually made before the war, gold coins and coinage were retained. I then thought that the custom of handling gold coins was so firmly intrenched in some places, notably Great Britain, that the plan would be more welcome if gold coins were retained even if only as token coins.

Since then, the war itself has brought about the very retirement which we are discussing and has conquered most of the popular prejudice which stood in its way; and, from motives of economy, all nations, including Great Britain, will probably now prefer not to return to the general use of gold coins. It has therefore seemed best not to cumber the present text with the description [1] of what now proves, apparently, to be an unnecessary complication.

There is, however, a third plan possible, intermediate between the plan of the present text (in which gold coins are retired and their coinage ceases) and the plan formerly put forward (in which both coins and coinage are retained).

This intermediate plan is to authorize the retention of the *existing* gold coins but to stop the coinage of *new* coins — though retaining, of course, the *unrestricted deposit* of gold bullion in return for the issue of gold dollar certificates.

This third plan would seem to me to be preferable in practice to either of the other two as it would dispense with the need of recalling the few gold coins now outside of government vaults and would not involve any

[1] This will be found in the *Quarterly Journal of Economics*, February, 1913, pp. 213–235. It is interesting to observe that Simon Newcomb, one of the earliest writers who anticipated me in formulating the plan, also suggested this feature by which gold coin could be retained. See *North American Review*, September, 1879.

special difficulties no matter which way the value of gold should change.

Thus if, at any time, the gold coins were worth *more* than their contained bullion, they would continue to circulate as token coins, each eagle of 258 grains entitling the holder on demand to a ten-dollar certificate or ten dollars of gold bullion (of more than 25.8 grains per dollar).

On the other hand if, at any time, they were worth *less* as money than the contained bullion, they would be melted by the owners, disappear as coin, and be deposited with the government as bullion in return for certificates. Any gold coin in the government vaults would likewise be melted.

But the process would stop there, limited by the amount of gold coin available. There would be no "endless chain" of redemption of certificates at one rate and recoinage at another such as would (as explained in my article in the *Quarterly Journal of Economics*, February, 1913) have to be guarded against in the second of the three plans.

In spite of the slight practical superiority of this third method of handling existing coin, I have preferred in Chapter IV to present the first method as simpler to understand, and less confusing to the reader. With so few coins as are now in circulation it is really almost immaterial which of these two methods is adopted.

6. What Shall Be Done Concerning the "Gold Clause" in Existing Contracts

One of the questions which will have to be faced when stabilization is adopted is: What should be done with the numerous bonds and other contracts containing a "gold clause" to the effect that the contract calls for payment in "gold coin of the present weight and fineness"?

This clause had its origin in the nineties when the "free coinage of silver at 16 to 1" was agitated. It

was intended to safeguard the creditor against payment in silver dollars which, it was justly feared, would be greatly depreciated in purchasing power, if the 16 to 1 proposal were adopted.

The statute enacting stabilization ought to include a specific settlement of this gold-clause question.

Otherwise, it would be left for the courts to interpret, and long and costly litigations would be sure to result. Pending a decision by the Supreme Court the status of all gold-clause contracts would be uncertain. In attempting legally to resolve this uncertainty there would be two widely different views possible. It might plausibly be argued that in the gold clause, "coin" was specified only for its convenience to handle, as compared with bullion. According to this interpretation gold-clause contracts ought, under stabilization, to be reckoned in terms of gold bullion, and when the gold dollar became greater or less than 23.22 grains of pure gold, contracts containing the gold clause would still have to be measured in dollars of bullion of 23.22 grains each.

But, on the other hand, it might with almost equal plausibility be argued that the word "coin" must be taken literally and that the creditor had the right to require the delivery of such coins or their equivalent. If such were the interpretation and (as supposed in Appendix I, § 5) gold coin were not retired but continued in existence as token coins, *i.e.* at a value above that of the contained bullion, the technical fulfillment of the gold clause by the payment of these "overvalued" coins, or their equivalent, would coincide with the use of stabilized dollars to which they would be equivalent (as explained in Appendix I, § 5).

This interpretation, insisting on "coins," would, however, encounter difficulties if gold coins were abolished entirely (as suggested in the text) or if, though not recalled by law, they were all melted into bullion because the bullion in them had come to be worth more than their face value (as supposed in Appendix I, § 5).

All these technical controversies would be avoided if, in the statute establishing a stable dollar, the gold clause in existing contracts were abrogated entirely and unambiguous requirements were substituted to meet the new situation and carry out the real object of the gold clause.

It should be pointed out that abrogation, though beyond the power of our individual states under Article I of our Federal Constitution, is apparently quite within the power of the Federal Congress.[1]

Having thus abrogated the gold clause in all contracts outstanding at the date of the stabilization law, Congress could replace that clause by whatever provision it chose.

The provision which, on the whole, seems to me the fairest from various standpoints is to make all such contracts exactly like all others, *i.e.* payable in stabilized dollars.

That such a requirement would, even technically, reinstate the gold clause — under at least certain circumstances (such as the retention of gold coin as "token coin") — might well be argued, as has just been shown.

But the only justification worth while for such a law is that it would do justice and by doing justice we would, in a broad sense, be carrying out the intent of the gold clause. This clause was never intended to introduce a hazard into contracts but to take one away, not to enable one of the contracting parties to mulct the other

[1] This power is, I understand, well recognized in a general way although no case precisely like that here considered seems to be on record. The nearest cases were, apparently, the famous legal tender cases in reference to which the Supreme Court certified the right of Congress to make United States notes legal tender for the payment of debts contracted prior to the legislation. The legal tender act, it is true, related only to contracts to pay money generally and not to contracts to pay a specific kind of money such as "gold coin of the present weight and fineness." But Justice Bradley (12 Wall. 457, 566, 567) said: "I do not understand the majority of the Court to decide that an Act so drawn as to embrace in terms contracts payable in specie would not be constitutional. Such a decision would completely nullify the power claimed for the Government."

but to prevent it. In a broad sense, therefore, the substitution of stable dollars for " gold coin of the present weight and fineness " would carry out the spirit if not the letter of that clause under the new conditions. Stabilization would supersede the gold clause as a more perfect way of attaining the same general object — contractual justice.

And not only would complaint over such substitution be unjustified but it would rarely, if ever, be made or thought of for the very simple reason that we would go on in our habit of thinking in terms of dollars.

Under stabilization the debtor for $10,000 would still expect to draw his check for exactly $10,000 and the creditor would expect to receive exactly that sum. In 99 out of 100 cases the question of whether, under the gold clause, the check ought perhaps to be drawn for a larger or smaller sum than the face of the obligation would never enter the head of either party.

On the other hand, if exceptional treatment were given to contracts having the gold clause, so that these were not to be fulfilled in stabilized dollars, there *would* be great complaint. For then the only way to discharge a gold-clause contract to pay $10,000 would be to pay something more or less than $10,000 according as the price of gold had risen or fallen. If, because of a raking up of the gold clause, a debtor owing $10,000 is informed by his creditor that he has to pay, say, $10,842.79 the $842.79 will obtrude itself like a sore thumb and seem to the debtor, as it really would be, the exact measure of an injustice.

On the other hand, if the discrepancy between the stabilized dollar and " gold coin of the present weight and fineness " were in the other direction and a debtor tendered what he owed under a $10,000 debt subject to the gold clause by offering to pay $9,500 (which we shall suppose is the equivalent of ten thousand dollars of 23.22 grains of pure gold each) the creditor would always feel, and justly, that he had been robbed of $500

by a wrong interpretation of a clause originally inserted to safeguard him against just such injustice.

Moreover, if the gold clause were not thus assimilated to the new dollar great confusion would be introduced from the double reckoning. Probably the most extreme instance would be that of the insurance companies, the assets of which are invested largely in gold-clause bonds but the liabilities of which to their policy holders are payable in "lawful money." If the dollars used for measuring both assets and liabilities are to be made different, these companies might become either bankrupt or greatly enriched as a consequence.

It seems clear, therefore, that the solution here offered of the gold-clause problem is the justest, simplest, and most smoothly working of the various solutions which might be considered.

If, however, Congress should conclude that it was necessary to provide further against the possibility of any complaint, it could leave the contracting parties some choice in the matter. That is, the Act to stabilize the dollar could serve notice that stabilized dollars would be understood unless objections were raised by either contracting party between the date of the Act and the date on which the new system was to be put into effect. For cases where such objection was actually raised, the law could provide that the two parties to the contract might come to an agreement and further that, in case of their failure to do so, the creditor should have the right to choose, *in advance*, between the stabilized dollar and a dollar of bullion of the present weight and fineness. When this choice was made, it could not, of course, be altered afterward, even if, as would be quite possible, the creditor should find that he had chosen against his own interests.

The result would undoubtedly be that even the few contracting parties who would raise the question of the gold clause would find an easy way to settle it, while none of those who failed to raise the question could

ever maintain that they had not been given a fair chance, for they had at one time been virtually told to speak then or else forever after hold their peace.

7. Bank Credit and the Plan

A. Misconceptions. It should be pointed out that the plan proposed in this book, by maintaining the purchasing power of the *gold* dollar, necessarily maintains also the purchasing power of all other dollars, so long as these other dollars are kept interconvertible with gold dollars.

This implies that due provision for redemption, in gold, of paper money and bank deposits must be maintained by suitable legislation or regulations, such as are usually afforded by sound currency and banking laws and practices. That is, the stabilization plan presupposes sound banking though not any special *form* of sound banking.

In this connection some curious misconceptions have arisen, such as the notion that to stabilize the gold dollar can apply only to gold and not to credit or can only correct such instability as has its origin in gold and not such as has its origin in credit, in commodities, or elsewhere. These views overlook the fact that all dollars are interconvertible.

One friend of the plan fell into an opposite error in that, instead of finding any limitations on the power of the plan to effect stability, he assumed that it would dispense with the need of any restrictions whatever on the inflation of paper or credit! We could, he thought, "run the printing press" *ad libitum* and, for instance, pay the cost of the Great War thereby, without suffering the penalty of high prices!

Of course the process of stabilizing the dollar has no such magic power to take the place of sound currency and banking. If, with one hand, we were to stabilize the gold dollar and, with the other, we were to inflate paper or deposits, we should be pulling both

ways at once and if the conflict were continued long enough inflation would, in the end, exhaust and defeat stabilization. The inflation, tending to raise prices, would necessitate an increase in the dollar's weight which would involve a proportionate decrease in the number of dollars in the reserve. The reserve would also be depleted by the increased tendency to redeem certificates in the heavier dollars, the certificates displacing the gold and driving it abroad.[1]

All would go well and the price level and purchasing power of the dollar be approximately maintained, so long as redemption could also be maintained. But if the inflation were persisted in far enough, the constant increase in the credit superstructure and decrease in the gold base (*i.e.* in the number of dollars in it) would ultimately break down redemption. Thereafter the gold dollar would cease to exist as a factor in our monetary system, leaving only irredeemable paper and deposit dollars in actual use. After this breakdown the paper and deposit dollars would depreciate.

B. The Effect of War on Bank Credit. During the Great War, as in other great crises, the exigencies of Government finance caused, in almost all countries, an expansion of paper and credit almost regardless of the effect on prices or on redemption. At such times the pressure for inflation is almost, or quite, irresistible. The paramount object is then financing the war rather than

[1] This assumes the existence of the "indefinite" reserve system (see Appendix I, § 1, *G*).

If the "definite" reserve system (see Appendix I, § 1, *B* and *F*) is maintained, inflation *of certificates* would be impossible; for as fast as the issue of certificates went on, their redundancy and backflow would require their cancellation. Other forms of inflation, such as deposit inflation, would, however, still be possible. These would have the effect (through raising prices and weighting the dollar) of decreasing both the gold reserve and the certificates in unison. The result would be not to weaken the Government gold reserve as against certificates, but to weaken all other, *e.g.* bank, reserves held in these certificates. The ultimate disaster, which would still overtake continued inflation, would then consist in a cleavage, not between gold and certificates, but between these two and the other forms of money and credit based on them.

maintaining monetary standards, and any stabilization plan might have to be temporarily suspended as one of the emergency measures of war, just as the English Bank Act is temporarily suspended during a crisis. Stabilization could be maintained provided the war could be financed without recourse to inflation, *i.e.* could be paid for out of taxes and loans from savings. Inflation, which is really a forced loan, puts the otherwise unpaid cost of the war on the shoulders of those of "fixed" incomes, in the form of a high cost of living.

In the future, we have reason to believe, no such world crises are in store. But should they come, and stabilization were suspended, we would, of course, be no worse off than if there had been no stabilization. (See also Appendix II, § 2, *D.*)

C. Maintenance of Redemption. Thus stabilization, to be successful, implies the maintenance of redemption. The typical or ideal, though by no means the only efficient, type of a redemption-law is one which keeps deposits and paper money more or less proportional to bank reserves (of gold bullion dollar certificates) together with a Government reserve law (as described in § 1) which keeps the volume of gold bullion dollar certificates proportional to the volume of gold dollars in the Government reserve. Under such conditions all parts of the circulating medium tend to expand or contract in unison and a change in weight of the basic gold dollar carries with it a control of the whole mechanism of exchange, cash, and credit.

Bank credit, paper, and the gold reserve (in dollars) would then expand or contract as needed (by the requirements of trade, etc.) to keep the price level constant.

D. The Rôle of Bank Discount. It would be going somewhat outside the scope of stabilization plans to discuss, in detail, the banking procedure for keeping the credit superstructure more or less proportional to the redemption base of gold or gold certificates.

Suffice it, in this connection, to call attention to one

factor in the case, the importance of which is seldom realized — the rate of bank discount.

Under almost any sensible banking system the rate of discount is one of the regulators of the volume of credit relatively to reserve. If there is undue expansion of credit relatively to the reserve, the rate of discount is raised to curb it. If, on the other hand, there is a plethora of reserve, the rate of discount is lowered to stimulate an increase of credit. As the expansion and contraction of credit are directly related to the price level, the rate of bank discount is thus concerned very vitally with the price level.

The greatest of banks, the Bank of England, is a model in this respect. It alternately defends and releases its gold reserve, which is the basic gold reserve of England, by raising and lowering the bank rate.

The report, after the Armistice, of the Lord Cunliffe Committee on Currency, Banking and Foreign Exchange shows clearly how the bank rate keeps the English price level in tune with world price levels. Speaking of this long-established system the report says:

"When, apart from a foreign drain of gold, credit at home threatened to become unduly expanded, the old currency system tended to restrain the expansion and to prevent the consequent rise in domestic prices which ultimately causes such a drain. The expansion of credit, by forcing up prices, involves an increased demand for legal tender currency both from the banks in order to maintain their normal proportion of cash to liabilities and from the general public for the payment of wages and for retail transactions. In this case also the demand for such currency fell upon the reserve of the Bank of England, and the bank was thereupon obliged to raise its rate of discount in order to prevent the fall in the proportion of that reserve to its liabilities. The same chain of consequences as we have just described followed and speculative trade activity was similarly restrained. There was, therefore, an automatic machinery by which the volume of purchasing power in this country was continuously adjusted to world prices of commodities in general. Domestic prices were automatically regulated so as to prevent excessive import." [1]

[1] *Federal Reserve Bulletin*, December, 1918, p. 1178.

Professor Knut Wicksell of Sweden has, for many years, advocated a more extensive use of this regulative function of the rate of bank discount as a means of preventing cycles of credit and prices. Mr. Paul Warburg, formerly of the Federal Reserve Board, has suggested that the index number of prices should be one of the data scrutinized by the Federal Reserve Board to help guide it in fixing the rate of discount. Senator Shafroth proposed that the Federal Reserve Board should fix discount rates in such a manner as to regulate credit with the object of stabilizing the level of prices.

This adjustment would not of itself, however, be sufficient to keep the price level stable; for while it controls the credit superstructure, it does so only *relatively* to the metallic base and if this base is uncontrolled relatively to the needs of business, the credit superstructure being proportional to the base, that credit superstructure is equally uncontrolled relatively to the needs of business.

But, given *both* a stabilization of the base *and* any sound banking system, that is, any system which makes credit expand or contract with an expansion or contraction of reserves, we can secure complete stabilization.

8. International Aspects of the Plan

A. The Mint Price. It goes without saying that the plan would have a wider usefulness if adopted by all nations than if adopted by only one, or a few. But, if at first its general adoption were not found feasible, the question remains: Would the plan work and work well if adopted, say, by the United States alone?

Many persons have imagined that a single nation could not make the plan work, that the money problem, being essentially an international one, requires concerted action, that it is therefore imperative that there should be " the same mint price of gold " through-

out the world, otherwise gold would flee entirely from or to the nation which should alter the present "uniform" price.

We shall see that these ideas are mistaken. In the first place let us see clearly the "fallacy of the mint price." Superficial reasoning, starting from the fact that our mint price ($20.67 an ounce of pure gold) and England's mint price (£3. 17*s.* 10½*d.* for gold $\frac{11}{12}$ fine) are now "the same," concludes that, if our price were lowered 1%, *i.e.* to $20.46, while the English price remained unchanged, *all* our gold would be sent to England to take advantage of the "higher" price there.

But $20.67 would then cease to be "the same" as £3. 17*s.* 10½*d.* and $20.46 would become "the same" as £3. 17*s.* 10½*d.*! The reason is that comparisons between English and American prices are based on the "par of exchange" and this par would change. At present the par is $4.866 of American money for £1 of English money; but this par of exchange is based on the relative weights of the dollar and the sovereign! Consequently a change in the weight of the dollar and the price of gold will change proportionally the par of exchange. If the dollar's weight is changed 1% so that the mint price becomes $20.46 (instead of $20.67), the par of exchange will become $4.82 (instead of $4.86⅔).

It is true that each increase in the weight of the gold dollar in America — in other words, each fall in the official American price of gold — would *at first* tend to discourage the minting of gold in America. The miner might send more of his gold to London, where the mint price had not changed, and "realize" by selling exchange on the London credit thus obtained. But the rate of exchange would soon be affected through these very operations by which he attempted to profit, and his profit would soon be reduced to zero; the export of gold to England would increase the supply of bills of exchange in America drawn on London and lower the rate of exchange

until there would be no longer any profit in sending gold from the United States to England and selling exchange against it. When this happened it would be as profitable to sell gold to American mints at $20.46 per ounce as to ship it abroad; and $20.46 in America would be the exact equivalent, at the new par of exchange ($4.82), of the English mint price of £3. 17*s.* 10½*d.*

Consequently, although the new mint price of $20.46 is in figures lower than the old, yet, as it is in heavier dollars, it would still be "the same" as the English mint price of £3. 17*s.* 10½*d.*

It is clear that this sameness of mint price as between the two countries really means nothing of economic consequence, for the reason that all prices of gold are in terms of gold. At bottom the basic fact is simply that exchange is at par when an ounce of gold in America will, in the exchange market, buy the right to an ounce of gold in England.

This obvious fact is concealed, or "camouflaged," by measuring gold in America in terms of dollars, and gold in England in terms of sovereigns; but the dollar and the sovereign are merely units of weight, like the ounce, with definite ratios to the ounce and to each other. *Of course* the price of gold in America (in terms of itself) is "the same" as the price of gold in England (in terms of itself) when either is translated into the other by means of the par of exchange (or ratio between the two units).

This would be self-evident if the numbers were a little simpler. Thus, if the dollar were exactly a twentieth of an ounce of pure gold and the sovereign exactly a quarter of an ounce, the mint price in America would be $20.00 an ounce and in England, £4 an ounce; and the par of exchange would be $\frac{20}{4}$, or $5 per £. Naturally, then, £4 an ounce would be "the same" price as $20 an ounce when we translate £'s into dollars at $5 per £, *i.e.* $20 = 5 × $4, or $20 = \frac{20}{4} \times 4$. Such sameness of price would evidently still exist if the

dollar were doubled, *i.e.* were made a tenth of an ounce. The mint price in America would then be $10 per ounce which (the par of exchange being $\frac{10}{4}$ or $2\frac{1}{2}$ per £) would be "the same" as £4 an ounce; for $10 = $2\frac{1}{2} \times 4$, or $10 = \frac{10}{4} \times 4$.

To turn from theory to experience, if those against whom I am reasoning were correct, everybody would now take his gold to the Mexican mint where he could get twice as many dollars as he can get from the United States mint! Obviously the fallacy lies in the fact that Mexican dollars are half as heavy as ours.

B. Gold Reserves and Price Levels as Internationally Related. So much for the effect of our individual action on the international exchanges. The second effect to be emphasized is the release of the United States from the danger of alternate gold famines and feasts. At present foreign countries may deluge us with gold or drain it away. The only effectual stop to the inflowing tide comes from the rise of our price level and our only important defense against the continued ebb of gold is from the fall of our prices. Thus is our gold reserve now at the mercy of Europe. Their banking and currency policies, over which we have no control, their trade and tariffs, their wars, all affect our gold supply. Thus the Great War, by dumping the gold of the belligerents on neutral countries (including, in 1915–1917, the United States), inflated prices in these neutral countries and a reflux of gold may deflate them whenever Europe deflates her currencies sufficiently.

The only methods used in the war to safeguard against these floods and ebbs of gold were: (1) — as against a flood — the action of Sweden, Holland, and Spain virtually stopping the free coinage of gold and (2) — as against an ebb — the "embargo" on the export of gold adopted by many countries, including the United States.

These were attempts at a partial control of a nation's gold supply by stopping the inflow of gold into the nation's circulation or its outflow therefrom.

But the stabilization plan would afford a complete control of the amount of gold, measured *in dollars*, without forbidding or much affecting the inflow or outflow of gold measured *in ounces!*

Had we had stabilization in 1915 we would have been protected against gold inflation, from which we have suffered so grievously. When the gold began to flow in and prices to rise, our gold dollar would have been enlarged. Also the number of gold dollars in the country would have been kept from increasing, despite the increase in the physical amount of gold. Finally the price level would be kept from rising.

Likewise we would have been defended against a drain of gold and would have needed no embargo. If gold began to leave us and prices to fall, gold dollars would be lightened, their numbers would be thereby kept from decreasing, despite the decrease in the physical amount of gold, and the price level kept from falling.

If, then, the United States should "go it alone," we would be emancipated from the present involuntary "entangling alliance" of our currency with foreign currencies.

Implied in the last would be the emancipation of our price level from its entangling alliance with foreign price levels. The price level of each country now depends on that of those other countries which have the same monetary standard. The "High Cost of Living," one of the manifestations of inflation, communicates itself from one country to another having the same standard and no one country can avoid the common contagion so long as it has the common unstable unit.

In short, under our present system our money, credit, and price level are far more internationally entangled than they would be if we had stabilization. So long as we let the gold standard drift we are helpless to protect ourselves from the effects of our neighbors' acts on that standard. The close of the war makes us especially liable to the influence of changing

currency policies of Europe, policies as yet unknown and unknowable.[1]

C. Exports and Imports. As to the effect on international trade in commodities, these effects would be complex and somewhat varied according to circumstances, though not, probably, important in magnitude.

Suppose that the United States had a stable dollar and other gold standard countries had not. Suppose further that gold units tended throughout the world to depreciate and therefore that we were obliged successively to increase the weight of the dollar, *i.e.* to decrease the price of gold, and thereby to lower the rate of foreign exchange as measured in American dollars.

Under these circumstances the price level in the United States would remain stationary, the price levels in other countries would rise, and the rates of exchange between the United States and those countries would change accordingly, *e.g.* exchange on London would decline.

Normally, or in the long run, the change in the exchange between two countries is proportional to the divergence of their price levels. Thus, let us assume that prices in England gradually increase until they have doubled while those of the United States remain the same, and that the exchange on London falls correspondingly from $4.86 to $2.43 per pound sterling.

Under these assumptions imagine an American exporter who now finds that, while the American prices with which he is concerned are about the same, the English prices he can get for his goods are doubled. He receives a bill of exchange for £200 where before he received one for £100. But when he sells the £200 bill at $2.43 per pound he receives the same $486 which he used to get when he sold the £100 bill at $4.86.

Evidently if the changes in price level and the changes in the rate of exchange thus correspond to each other, there is neither gain nor loss.

[1] For further discussion see Appendix I, § 4.

So far as gains or losses do exist they are only differential and due to the failure of the price and exchange movements to correspond as exactly as is assumed above. That is, there is here, as always where price movements occur, some lagging behind of certain elements. These evils are evils of transition and tend to disappear as the transition, *i.e.* the price movement, disappears or the movement is reversed. Whatever harm is done is due not to a *changed*[1] price level, but to a *changing* price level.

If, as seems to be usually the case, the rate of exchange is adjusted more promptly than the price level, the exchange will reach $2.43 before the price level has doubled and the exporter will receive less than £200 and, so, less than $486. In this case he would have suffered somewhat from English inflation which, presumably, he would not have suffered had there been no stabilization and had American prices but kept pace with English prices. On the other hand, if the pound sterling should appreciate, the American exporter would gain slightly.

Reversely, the American importer would gain a little from stabilization when foreign price levels rose and lose when they fell.

We see that stabilization in one gold standard country alone would expose importers and exporters to the chance of certain slight differential gains and losses, one of the two classes always gaining from the maladjustment while the other is losing. This evil of introducing a *new risk* to importers and exporters is offset,

[1] The common crude idea that a mere difference in the purchasing power of monetary units of two countries will help exporters in the country with the "cheaper" money and hurt importers is, of course, absurd. If this idea were correct, there would be an enormous stimulus to the flow of goods from Mexico to the United States and check to the flow from the United States to Mexico because the Mexican dollar is only half our dollar. Naturally that difference between the dollars is fully taken into account. It is only when the relation between the two is disturbed and before the new relation has been fully taken into account that exporters and importers are affected, even in a slight degree.

however, by the removal of the *old* risks connected with their dealings within the United States.

Furthermore, since the war, there is no common gold standard anyway ! Currencies are in chaos, both relatively and absolutely. A stabilized dollar could well be resorted to as a common denominator in foreign trade, just as the old " trade dollar " was resorted to. If international contracts were drawn in stabilized dollars we would be freed from all the uncertainties of roubles, marks, lire, francs, etc. These uncertainties would then fall only on the countries employing such units.

But even if foreign trade were somewhat disadvantaged by stabilization, we must remember that usually over nine tenths of American trade and doubtless a larger fraction of American contracts are within the borders of the United States so that, to the great bulk of Americans, stabilization would be an unmixed blessing.

It is unfortunately true, however, that, to most people, international trade looms up, out of its true perspective, as a far bigger factor in a nation's economic life than it ever really is. As every teacher of economics knows, the average citizen, untutored in economics, is a victim of the old mercantilistic fallacy and still imagines that the old mercantilistic phrases — " favorable balance of trade " and " unfavorable balance of trade " — which have been handed down to us are to be taken literally. Often it is even assumed, absurd though it obviously is, that the only gain which a country as a whole can get is in an excess of exports over its imports and an accumulation of money. This is not the place to consider such elementary errors. Any textbook on economics exposes the fallacy ; and the lessons of our recent experience with an accumulation of gold should make it clear that an accumulation of money in a country simply debases the purchasing power of that money.

D. Spreading the Gold Points. There would then be no real international inconvenience introduced by

the stabilization plan unless we count as an inconvenience the fact that the "gold points" of exchange would, under certain conditions, be wedged a little further apart (by the amount of the brassage) than at present. Even this would not happen so long as conditions were such that in *both* of the countries gold is flowing into circulation and not out (or, in *both*, out and not in) so that the price of gold within each country remains continuously at the lower (or continuously at the upper) of the two limits set by the brassage and discussed, in another connection, in § 2 above.

Under these conditions, a periodical shift in the official prices of gold would not widen the gap between the gold shipping points; it would merely raise or lower them both in unison. Nor would the reversal of the golden stream from an *in*flow into circulation to an *out*flow from circulation widen that gap, provided the reversal took place simultaneously in both countries. Only when it happened that gold would flow into circulation in (say) the United States and out of circulation in (say) England, would the gold shipping points between the two countries be spread apart by the amount of the brassage.

By proper international arrangements as to exchange, even this occasional result could be avoided. The international exchange could be itself stabilized at Government expense as has been done during the war.

E. The Adoption of the Plan Would Spread. Thus, on the merits of the question, there is little or nothing to be said against stabilization by one country alone, while its advantage to the country adopting it would be very great indeed. In this connection I may call attention to a recent dispatch from London which says: "English capitalists are certain that the country which first succeeds in reorganizing its currency will be able to obtain a large share of international business."

Sooner or later the perception of the advantages of stabilization would probably lead to the general adop-

tion of the stabilization principle. This might come about either at once by concerted action or gradually by individual action.

With a league of nations, joint action in such matters will be far easier than ever before; and we must not forget that there was joint action once in the case of the "Latin Union" which maintained bimetallism. In this case France, Belgium, Switzerland, Greece, and Italy joined in a uniform standard of currency based on gold and silver. The present exigency will create a powerful motive toward some such action.

The war has upset the monetary standards of the whole world and has brought forward the questions of resumption, deflation, high cost of living, and price movements generally. All of these are related to the more fundamental question of a standard of value, of which that of stabilization is an unescapable part.

Monetary standards already constitute an international question because, under our present system, any disturbance in the price level in one country necessarily affects the price levels of the rest.

If the stabilization plan were adopted internationally, there should, of course, be a common index number. This would not sacrifice greatly the accuracy of adjustment for any one nation; for we have already seen that the index numbers of different countries having the same monetary standards are very similar and we know that, with the future development of international trade, there will come about an even closer harmony of price movements.

In case joint action could not be secured at the outset, individual action by one country, especially if that country were the United States, would, almost certainly, lead to the general adoption of the plan.

Objectors point out that this was not true of bimetallism. Their argument is that if an agreement on international bimetallism could not be secured we cannot hope to secure anything so ambitious as an

international standardization of monetary units and that, therefore, we need not trouble ourselves about attempting the impossible. But, as one will see by reading H. B. Russell's book on "International Monetary Conferences," when the proposal to resume bimetallism was made there was a special obstacle which would not exist in the case of the stabilization plan.

This obstacle was the realization, based on the experience of the Latin Union, that when any nation or nations have bimetallism in successful operation, all the other nations enjoy its benefits as much as if they had it themselves but without the trouble or responsibility of operating it. For instance, the Latin Union had, as an intermediary between the gold standard countries and the silver standard countries, virtually held together the rupee and the pound sterling in a fixed ratio to the great benefit of England without effort on her part. Under such conditions, for a long time after bimetallism broke down in 1873, almost every nation wanted some other nation to restore it but wanted, if possible, to avoid doing so for itself! In modern slang each would "let George do it."

In the case of the standardized dollar, on the other hand, if one nation should break the inertia of custom and adopt the plan, and if it were soon seen that this nation was getting benefits from it while all the other nations lacked these benefits and, in fact, were being somewhat injured by the upset in their exchange pars, these other nations would soon want to come in, as the only way to escape the evils and secure the benefits. The case would be analogous, not to the reluctant attitude toward international bimetallism, but to the "scramble" of nations to get on to the gold standard. After the breakdown of bimetallism in 1873 commercial nations turned, one after another, to the gold standard in order to secure the advantage of a stable rate of exchange on London and other important commercial centers.

9. Numerical Illustrations under Various Assumptions

A. The Standard Hypothetical Case. A mental picture of the actual operation of the stabilizing process can best be obtained from illustrative numerical examples, such as are considered in this section.

There are five factors determining the stabilization process: the "*brassage*" charge, which serves as the limit on any single adjustment of the dollar's weight, the amount of "*adjustment*" of the dollar's weight for a given deviation from par of the index number, the amount of the "*influence*" which said adjustment has on the index number, the "*lag*" of time elapsing between the adjustment and completion of its influence, and the prior "*tendency*" of the price level to rise or fall, were it not combated by the stabilization process.

Our first example will be called the "*standard hypothetical case.*" In later sections the several conditions will be separately varied from those of this standard case.

The standard hypothetical case assumes the five factors to be as follows:

(1) *Brassage* charge: 1%.

(2) *Adjustment* rule: 1% for each 1% of deviation from par of the index number (no one adjustment to exceed the brassage).

(3) *Influence* thereof on index number: 1% for each 1% of adjustment.

(4) *Lag* of said influence following the adjustment causing it: 1 adjustment interval.[1]

(5) *Tendency* of price level: were it not for stabilization the price level would at first increase 1% each interval; afterward, it would decrease 1% each interval.

The fifth assumption implies that, *were it not for stabilization*, the index number would be:

[1] We may, to fix our ideas, consider this *interval* between successive adjustment dates to be two months. But its absolute length affects neither the argument nor the calculations.

At beginning of the 1st interval 100.

At the beginning of the 2d interval 1% above 100 or 101.

At the beginning of the 3d interval 1% above 101 or 102.01.

At the beginning of the 4th interval 1% above 102.01 or 103.0301.

At the beginning of the 5th interval 1% above 103.0301 or 104.060401.

Etc., increasing as by compound interest.

Not to put too fine a point on these figures, we may omit decimals and use the figures 100, 101, 102, 103, 104, etc., until the " compounding " produces an appreciable effect. When, for instance, the index number is in the neighborhood of 150 the 1% increase will make the next index number greater by about 1½; and when it is in the neighborhood of 200, the 1% increase will make a difference of about 2. Thus, if we assume that (were it not for stabilization) the course of prices would rise 1% each adjustment interval from 100 to 200 and then fall, the index numbers would run approximately as follows: 100, 101, 102, 103, 104, . . . 150, 151½, 153, . . . 198, 200, 198, 196, . . . 150, 148½, 147, ...

Under the fifth assumption, we may distinguish four types of price movements — the four which could take place in actual experience, — a rise, a fall, a reverse after an upward movement, a reverse after a downward movement.

We are now ready to calculate [1] what, under the five assumptions formulated, the *stabilized* course of the index number will be.

At the start, the index number being 100 or par, no adjustment in the dollar's weight will be made. Con-

[1] In all the calculations of this section it is assumed that either the mint price rules the market all the time or the redemption price rules it all the time. If, or when, the market price shifts between the two, in the manner discussed in Appendix I, § 2, the results would be slightly different, as can readily be calculated.

sequently, during the ensuing or first interval, the index number will be subject only to the assumed *tendency* to rise 1%, so that, at the beginning of the next adjustment interval, it will be 101, just as though no system of stabilization existed.

At this adjustment date, therefore, there is a *deviation* from par of the index number of +1%. This leads (by assumption 2) to an *adjustment* of the dollar's weight of 1%.

The *influence* of this adjustment will (by assumption 4) be felt during the ensuing interval and be registered at its close. That influence is (by assumption 3) 1%. If there were no *other* force, therefore, than this par-ward influence, the index number would then return to 100, or par.

But there *is* another force; namely, the *tendency* of the index number to rise 1% during this (second) interval. This force restrains the index number from returning to par and keeps it at 101. In short, the downward and upward forces neutralize each other so that the index number remains unchanged at 101.

Summarizing thus far, we may schedule the events as follows:

At beginning of 1st interval: index number 100; no *adjustment* of dollar's weight.

During 1st interval: no *influence* from adjustment, but only unhindered *tendency* of index number to rise, +1%.

At beginning of 2d interval: index number, 101; *adjustment* of dollar's weight, +1%.

During 2d interval: *influence* of aforesaid adjustment on index number, −1%, neutralizing *tendency* of index number to rise, +1%, leaving, ——

At beginning of 3d interval: index number unchanged at 101.

But the *deviation* from par being still +1%, the *adjustment* in weight at the adjustment date now reached (the beginning of the 3d interval) is again +1%, which will again strive to bring down to par the index number

during the 3d interval by 1%, and again be foiled by the 1% rising *tendency*.

The same reasoning gives precisely the same result for each subsequent adjustment interval, as long as the 1% upward tendency continues.

That is, in each case, the new index number is the last index number (101) minus the 1% *influence* toward par, due to adjusting the dollar's weight, plus the 1% *tendency* to rise.

Thus, at each successive milestone, the formula for finding the new index number in terms of the old is $101-1+1=101$, as long as the 1% upward tendency exists.

The sequence is:

	Index Number[1]	*Influence* of Adjustment on Index Number	*Tendency* of Index Number, if Unstabilized
Beginning of 1st interval	100		
During 1st interval .		0	+1%
Beginning of 2d interval	101		
During 2d interval .		−1%	+1%
Beginning of 3d interval	101		
During 3d interval .		−1%	+1%
Etc., repeating.			

[1] This column also shows (by subtracting 100) the *deviation* from par and the *adjustment* of the dollar's weight, which is equal thereto.

When the downward tendency begins, the price level in the first adjustment interval will fall from 101 to 99. The reason is that, during this interval, the 1% *influence* exerted by the adjustment in the weight of the dollar is reënforced by the assumed *tendency* to fall 1%. That is, the index number after the first interval of fall will be $101-1-1=99$.

The index number, 99, is now 1% below par, *i.e.* the deviation is now −1%. The dollar will, therefore,

be reduced in weight 1%. The *influence* of this adjustment will now be 1% *upward*, counteracted, however, by the 1% *tendency* to fall, still assumed to exist. That is, the next index number will be 99 plus the 1% *influence* less the 1% *tendency*, or $99+1-1=99$; and it will, thereafter, remain 99 as long as the tendency to fall continues.

Assuming, to fix our ideas, that the reversal from an upward to a downward movement occurs at the point at which the index number would have reached 200 had there been no stabilization, the index numbers in successive adjustment intervals are given (omitting decimals) in the following table as they would be, both without and with stabilization.

WITHOUT STABILIZATION	WITH STABILIZATION
100	100
101	(100 + 1 =) 101
102	(101 − 1 + 1 =) 101
103	(101 − 1 + 1 =) 101
104	(101 − 1 + 1 =) 101
150	(101 − 1 + 1 =) 101
151½	(101 − 1 + 1 =) 101
153	(101 − 1 + 1 =) 101
154½	(101 − 1 + 1 =) 101
198	(101 − 1 + 1 =) 101
200	(101 − 1 + 1 =) 101
198	(101 − 1 − 1 =) 99
196	(99 + 1 − 1 =) 99
194	(99 + 1 − 1 =) 99
etc.	etc. etc.

From the standard hypothetical case, just calculated, experimental departures will be made in order to determine what set of rules will serve best in controlling price movements, as they are actually experienced.

B. Changing the Assumption as to the "Lag."

(*a*) *Assumptions same as in standard case except:* **lag** *changed from* 1 *to* 2 *adjustment intervals.*[1]

The index number, being uninfluenced by stabilization, will follow the assumed *tendency* for two adjustment intervals, and run: 100, 101, 102.

That is, at the start, or beginning of the first interval, there is no deviation from par and so no adjustment in weight; at the beginning of the second interval there is an adjustment in weight of +1%; but, as the lag between this adjustment and its influence on the index number is now assumed to be two adjustment periods, the following index number is unaffected and remains 102.

The par-ward influence (assumed as 1%) of the 1% adjustment made at the beginning of the second interval will, under our present assumptions, be felt during the *third* interval. During that interval this par-ward influence will strive to bring the index number down 1% from 102. But the assumed upward *tendency* of 1% keeps the index number at 102. At the beginning of the third interval, the 2% deviation would cause a 2% increase in the weight of the dollar, were it not for the brassage charge limiting any one increase in the dollar's weight to 1%, which will therefore be the increase effected. This 1% increase in the dollar's weight, made at the beginning of the third adjustment interval, influences the index number during the fourth interval to pull it downward; but the upward *tendency* will keep it still at 102. Thus the formula will be: 102 (the index number at any adjustment date) −1 (the influence of the *adjustment* at the preceding date) +1 (the *tendency* to increase) =102.

The following table shows the results:

[1] Since the *lag* is beyond our regulation, while the *adjustment* interval is what we make it, the lengthening of the lag in terms of adjustment intervals really means, in practice, the shortening of the adjustment interval in terms of the lag.

	INDEX NUMBER[1]	*Influence* OF ADJUSTMENT	*Tendency*, IF UNSTABILIZED
Beginning 1st interval	100		
During 1st interval .		0	+1
Beginning 2d interval	101		
During 2d interval .		0	+1
Beginning 3d interval .	102		
During 3d interval .		−1	+1
Beginning 4th interval	102		
During 4th interval .		−1	+1
Etc., repeating.			

[1] This column also shows (by subtracting 100) the *deviation* from par and the *adjustment* of the dollar's weight (except as this is limited to 1% by the brassage).

Upon reversal of the assumed price tendency the stabilized index number falls to, and remains slightly below, par.

(*b*) *Assumptions same as in standard case except:* lag *changed to* 3 *adjustment intervals.*

Following the same reasoning as under "*a*," we find the index number rising to 103, and then remaining at 103, the *influence*, thereafter, of the 1% adjustment being exactly neutralized so long as the 1% *tendency* to rise continues.

(*c*) *Conclusion as to lag.*

In the preceding examples the stabilization process is very simply and effectively applied, the restraining influence sooner or later (depending on the ratio between the lag and the adjustment interval) taking effect and thereafter, while unable to restore the index number to par on account of the steady upward (or downward) tendency, keeping the index number constant at a point slightly above (or below) par.

We see that the greater the lag in proportion to the adjustment interval, the greater is the range of the index number from par. Yet, even if the lag is many times the adjustment interval, the index number keeps *near* par.

Thus, if the adjustment interval is two months and it is assumed that the effect of any adjustment were not felt until six times that interval, or a whole year, the index number would at most deviate only 6%, assuming the other conditions unchanged from the standard case.

As a matter of fact the lag is not great.

Our experience during the war and other evidence mentioned elsewhere (Chapter II, § 8 and Appendix I, § 3) show that the influence of inflation or contraction is apparently rather prompt, the lag being probably less than two months, and possibly less than one month for an index number composed of the most responsive commodities.

It is desirable that our adjustment intervals should not be too short compared with the lag, say not shorter than a quarter of the lag.

On the other hand, the adjustment interval might be taken longer than the lag. For such a case the calculations and results would be the same as where the lag is one entire period. The influence of the adjustment would then be complete some time before the following adjustment date arrived; but since no index number is calculated during the interval, our calculations would not be affected.

Ideally, *i.e.* to secure the greatest attainable degree of closeness to par, the adjustment interval should be as nearly equal to the lag as possible. If the interval is shorter than the lag the influence is not felt fully until another adjustment, perhaps in the opposite direction, is made. A daily adjustment would therefore not help but hurt the closeness of the approximation. If the interval is longer than the lag, the price level is left for the balance of the interval to vary uncorrected. We would be neglecting the opportunity to correct it promptly.

C. Changing the Assumption as to the "Tendency."

(*a*) *Assumptions same as in standard case except:* tendency *increased from* 1% *to* 2% *per adjustment interval.*

Although the assumption hitherto made (of a 1% change in price level during every adjustment interval) implies a very rapid change (if the adjustment interval is two months), we shall now assume a movement twice as rapid.

In this case, the index number will be 102 at the end of the first adjustment interval. This deviation calls for an increase of 2% in the dollar's weight, but the brassage charge limits this increase to 1%. Hence, at the end of the second interval the index number is acted upon by two forces, the restraining influence (from the increased weight of the dollar) of −1% and the tendency to a further increase of +2%. The net result is +1%; that is, the index number becomes 103. At the next adjustment period a similar conflict between a 1% decrease and a 2% increase causes the index number to become 104, and this process continues. In short, instead of increasing by 2% each adjustment interval, the index number increases by 1%. The stabilization process, under these circumstances, cannot altogether control the price tendency, as long as this continues upward, but can decrease it by half. On the reverse movement, after passing par, the movement below par is similarly retarded by stabilization.

If, however, the brassage limitation permitted a larger adjustment, the restraint would, of course, be more effective. We shall see this clearly after the effects of different amounts of brassage are shown.

(*b*) *Conclusion as to tendency.*

We conclude that the greater the *tendency* of the index number to vary, the further the index number will deviate from par before being arrested — especially if the tendency exceeds the brassage — but that, unless the tendency to change is very great or long continued or both, the index number will still stay close to par.

D. Changing the Assumption as to the "Brassage."

(*a*) *Assumptions same as in standard case except:* brassage *changed from* 1% *to* 2%.

The results are exactly the same as in the standard

case. The higher brassage makes no difference because it was already high enough not to limit the adjustment, the *tendency* and *lag* also being as assumed.

(*b*) *Assumptions same as in standard case except:* brassage *changed from* 1% *to* 2%, *and also:* tendency, *first upward and later downward, changed from* 1% *to* 2%.

Under these conditions, the restraining *influence* exactly neutralizes the *tendency* and the index number is stabilized at 102 (during the upward tendency) and at 98 (during the downward tendency).

(*c*) *Assumptions same as in standard case except:* brassage *changed from* 1% *to* 2% *and also:* lag *changed from* 1 *to* 3 *adjustment intervals.*

In this case, the stabilization process results, while the price tendency is upward, in a movement of the index number between 1% below par and 5% above par. At reversal, the index number at first drops as low as 93, but recovers and (during the downward tendency) fluctuates between 1% above par and 5% below par.

(*d*) *Conclusion as to brassage.*

We conclude that, in general, the greater the brassage the greater the freedom of the index number to vary. It is freer to approach toward par; but it is also freer to depart from par, if the lag is very great, *i.e.* if the adjustment interval is made a very small fraction of the lag.

Practically, the brassage should be between, say, 1% and 3%. Within such limits it makes remarkably little difference to the result whether the exact figure is near one extreme or the other and any figure within these limits is adequate to secure a close approximation of the index number to par except under most extraordinary conditions such as those existing in a World War.

E. Changing the Assumption as to the "Adjustment."

(*a*) *Assumptions same as in standard case except:* adjustment *changed from* 1% *to* 2% (*per* 1% *deviation*).

The results are exactly the same as in the standard

case. The larger adjustment would make no difference because the brassage limitation would prevent it from taking effect.

(*b*) *Assumptions same as in standard case except:* adjustment *changed from* 1% *to* 2% *and also:* brassage *changed from* 1% *to* 2% *or above.*

A deviation above par of 1% would then call forth a 2% increase in the weight of the dollar. The influence of this 2% adjustment would be to decrease the index number by 2%, which influence, however, would be partly neutralized by the assumed upward tendency of 1%. The net result would be a fall of 1% which would bring the index number back to 100 at the next adjustment date. This would call for no adjustment in the next period, and the index number, being acted upon only by the upward tendency, would become 101. Thus it would continue to alternate between 100 and 101.

(*c*) *Assumptions same as in standard case except:* adjustment *changed from* 1% *to* $\frac{1}{2}$%.

We find the following results:

	INDEX NUMBER[1]	INFLUENCE	TENDENCY
Beginning 1st interval .	100		
During 1st interval . .		0	+1
Beginning 2d interval .	101		
During 2d interval . .		$-\frac{1}{2}$	+1
Beginning 3d interval .	$101\frac{1}{2}$		
During 3d interval . .		$-\frac{3}{4}$	+1
Beginning 4th interval	$101\frac{3}{4}$		
During 4th interval . .		$-\frac{7}{8}$	+1
Beginning 5th interval	$101\frac{7}{8}$		
During 5th interval . .		$-\frac{15}{16}$	+1
Etc.			

[1] This column also shows (by subtracting 100) the *deviation* from par and (by subtracting 100 and dividing by 2) the *adjustment* of the dollar's weight. The latter is also always equal, numerically, to its *influence*, given in the second column.

The index number increases but never reaches 102.

(*d*) *Conclusion as to adjustment.*

We conclude that the nearer the *adjustment* is to

the *deviation* the better stabilization will work — always assuming, of course, that the influence of the adjustment is as in the standard case.

F. Changing the Assumption as to "Influence."

(*a*) *Assumptions same as in standard case except:* influence *decreased from* 1% *to* ½% *(per* 1% *of adjustment).*

We have hitherto assumed that an adjustment of 1% in the dollar's weight would influence its purchasing power 1%. But this need not be assumed and would not be strictly true in practice, especially if the number of dollars, both of money in circulation and of deposits subject to check, were not kept strictly proportioned to the number of gold dollars in the reserve (as by the method described in Appendix I, §1 and §7).

The calculations, in the present case, are very similar to those of "*E* (*b*)" above.

Calling the original price level 100%, the index number at the end of the first adjustment period will be 101%. The dollar will now be increased by 1% which, according to our present supposition, would tend to lower the price level only half as much, *i.e.* ½%. As, during the second interval, the price level tends to go up 1% the new index number will be $101-\frac{1}{2}+1$ or $101\frac{1}{2}$. The excess of $1\frac{1}{2}$% above par will now call for a corresponding increase in the dollar's weight; but the brassage limitation holds it to 1%.

Accordingly, the next adjustment date will see an increase in the dollar's weight of 1% and the price level will be $101\frac{1}{2}-\frac{1}{2}+1$ or 102. The next increase in the dollar's weight will be again limited to 1% and the index number will be $102-\frac{1}{2}+1$ or $102\frac{1}{2}$, and so on.

Evidently, as the brassage is 1% the power of the system to stabilize will be limited to ½% per adjustment interval.

(*b*) *Assumptions same as in standard case except:* influence *changed from* 1% *to* ½% *and also:* brassage *changed from* 1% *to* 2% *or more.*

The results are, evidently:

	INDEX NUMBER[1]	INFLUENCE	TENDENCY
Beginning 1st interval .	100		
During 1st interval . .		0	+1
Beginning 2d interval .	101		
During 2d interval . .		$-\frac{1}{2}$	+1
Beginning 3d interval .	$101\frac{1}{2}$		
During 3d interval . .		$-\frac{3}{4}$	+1
Beginning 4th interval .	$101\frac{3}{4}$		
During 4th interval . .		$-\frac{7}{8}$	+1
Etc.			

[1] This column also shows (by subtracting 100) the *deviation* from par and the *adjustment* of the dollar's weight, which is equal thereto.

The stabilization now keeps the index number within 2% of par, the figures being identical with those of "*E* (*c*)" above, although the conditions as to the *adjustment* and its *influence* are different.

(*c*) *Assumptions same as in standard case except:* influence *changed from* 1% *to* 2%.

The index number will alternate between 100 and 101 as follows:

	INDEX NUMBER[1]	INFLUENCE	TENDENCY
Beginning 1st interval .	100		
During 1st interval . .		0	+1
Beginning 2d interval .	101		
During 2d interval . .		−2	+1
Beginning 3d interval .	100		
During 3d interval . .		0	+1
Etc.	101		

[1] This column also shows (by subtracting 100) the *deviation* and (by subtracting 100 and multiplying by 2) the *adjustment*.

(*d*) *Conclusions as to influence.*

We conclude that the adjustment of the dollar may be greater or less than the influence it has on the index

number without greatly lessening the efficiency of stabilization.

G. General Conclusions on Variations from the Assumptions of the Standard Case. We have seen that the stabilization device is such as to adapt itself, in a remarkable degree, to widely varying conditions.

The *brassage* charge may be anything from, say, 1% to 3% without greatly affecting the results and also (under any ordinary conditions) without impairing greatly the efficiency of stabilization.

The *adjustment* of the dollar's weight may be anything from, say, ½% to 2% per 1% of deviation without very greatly impairing the efficiency of stabilization, — at least under reasonable assumptions as to the other factors (influence, tendency, lag, and brassage).

The *influence* of the adjustment on the index number may be anything from, say, ½% to 2% per 1% of adjustment without greatly affecting the results, — at least under reasonable assumptions as to the other factors.

The *lag* may vary widely relatively to the adjustment interval. Practically this means that the *frequency of adjustment* may (other things equal) be anything from, say, a quarter of the lag to many times the lag without greatly restricting stabilization.

The *tendency* of prices to rise or fall may be permanently rapid and temporarily very rapid without often pulling the index number more than 1 or 2% from par, — assuming the other factors which affect stabilization (brassage, adjustment, influence, lag) to be as in the standard case. And no matter how great the tendency of prices to vary, almost all of this tendency can be eliminated if those other factors are adapted to the situation.

Practically, the problem is to secure the most ideal adaptation of these other four factors to the tendency as it exists.

The tendency (barring extraordinary times such as those of the Great War) has seldom averaged for long more than 4% per annum, which is more than the

average rate in the long, and almost unprecedentedly rapid, peace-time movement from 1896 to 1915.

In any one year the movement seldom reaches 12% or an average of 1% per month. In the whole pre-war period, 1890–1915, of 25 years for which we have figures of the United States Bureau of Labor Statistics this happened only twice, the figures then being 13% and 14%.

We have monthly figures beginning only with 1900. From these we find that, beginning with January, 1900, and taking every other month up to the end of 1915, the successive jumps of the index number by bi-monthly intervals were not over 1% in two cases out of three, were not over 2% in nine cases out of ten, and were not over 3% in 31 cases out of 32.

Our problem, as already stated, is how best to deal with such a tendency by selecting, as ideally as is open to us, the other four factors.

First consider the *ideal brassage*. This is scarcely capable of exact formulation. Evidently 3% would permit a full adjustment in almost all cases. But, as the calculations in "*H*" below will show, even a 1% brassage will be adequate for all practical purposes and other calculations which I have made show that there is remarkably little difference in the results between 1%, 2%, 3%, and 4% brassages.

To fix a figure, let us call the ideal brassage 1½%.

The *ideal adjustment* is, evidently, that which will tend exactly to correct the deviation on which it is based, thus bringing the index number back to par (except as further deviated by further tendency, and this of course is apt to be in either direction).

This ideal adjustment depends on what *influence* that adjustment has on the index number. If the influence is less than in the standard case the adjustment might advantageously be greater and *vice versa*. For instance, if the adjustment is 2% per 1% of deviation, this will just correct the deviation when the influence of that adjustment is ½% per 1% of adjustment. For

an influence of ½% per 1% of adjustment (*i.e.* of 1% per 2% of adjustment) makes an influence of 1% per 1% of deviation, which is the ideal.

As a matter of fact the conditions as to *adjustment* and *influence* assumed in the standard case are, doubtless, approximately true to life. At any rate if the "definite" reserve system (described in Appendix I, § 1, *B*, *F*) and the method of regulating the volume of bank credit (favored in Appendix I, § 7) are adopted so that the entire volume of circulating media is controlled as a whole in direct proportion to the percentage change of the dollar, a 1% adjustment in the weight of the dollar would have a 1% influence.

Even to employ the "indefinite" reserve system would, as we have seen in Appendix I, § 1, *D*, not greatly change the situation, unless or until a very large part of the world adopted that system. In that case there would be some advantage in increasing the adjustment to 1½% per 1% of deviation or even to 2%, the exact ideal figure depending on the results of an investigation of the repercussive effect of adjusting the weight of the dollar on the value of a given weight of gold.[1]

We come next to the ideal *lag* relatively to the adjustment interval; or, to express it in more practical terms, the ideal length of the adjustment interval relatively to the lag, or the ideal frequency of adjustment.

As we have seen, the ideal frequency is not the greatest possible frequency, but is such a frequency as will make the interval equal to the lag.

The lag for Dun's index number is probably about 1½ months. The lag for the index number of responsive commodities described in Appendix I, § 3, is probably less than 1 month. The ideal frequency is therefore probably somewhere between a fortnight and a month and a half. In the calculations of "*H*" below it is conservatively taken as two months.

[1] A study of this sort has been made by Professor J. M. Clark in his able paper "Possible Complications of the Compensated Dollar," *American Economic Review*, September, 1913, pp. 576–588.

The *influence* being as indicated, the *adjustment* should evidently be 1% per 1% deviation.

It will be seen then, that (1) the *tendency* is beyond our control; (2) the *lag measured in months* is under control only to a small extent as we may choose the index number but, *measured relatively to the adjustment period*, is fully under control; and (3) the *influence* may be assumed to be 1% per 1% of adjustment, provided we have a proper reserve system for the certificates and a proper banking system for deposits (as explained in Appendix I, § 7).

Practically, therefore, these three factors (influence, absolute lag, and tendency) must be taken as we find them and we can merely choose the best brassage, adjustment, and frequency of adjustment.

These we find to be, in round numbers, substantially those of the standard case.

In the following subsection we shall see what the results would be as applied to the historical facts since 1900, taking the brassage as 1% and the frequency of adjustment as bi-monthly, both somewhat more conservatively than the ideal.

H. The Stabilization Process Applied to the Actual Course of Prices.

(a) The assumptions suitable for practical conditions.

We pass now from the highly theoretical calculations just given to the practical question of how close to par the actual index number would keep under stabilization. The best answer can probably be reached by applying the same sort of calculations as those above to the actual price movements experienced since, say, 1900, the year from which the monthly index number of the United States Bureau of Labor Statistics dates.

We shall assume, as the best adjustment period, two months. This, as has been observed, is more than the length of probable lag between any adjustment and its influence on the price level, as explained in Appendix I, § 3. To be still more conservative, how-

ever, we shall assume that only two thirds of the influence from the adjustment is felt within the first adjustment period of two months and that the remaining third is felt in the ensuing period.

We shall assume the brassage to be 1%. Probably 1½% or possibly 2% would be better, but the above examples and various other calculations applied to the actual price tendencies in the period mentioned show substantially the same degree of closeness to par under brassage charges varying from 1% to over 4%.

We shall assume that (except where limited by the brassage) the adjustment of the dollar's weight is 1% for every 1% deviation from par of the index number, and that the influence of this on the index number is 1% for each 1% adjustment.

These assumptions may be put in the following form:

(1) *Brassage:* 1%.

(2) *Adjustment:* 1% for each 1% of deviation from par of the index number (subject to the condition that no one adjustment shall exceed 1%, the amount of the brassage).

(3) *Influence:* 1% for each 1% of adjustment in weight of the dollar.

(4) *Lag:* ⅔ of this influence felt within the first adjustment interval of two months and the remaining ⅓ in the second adjustment interval.

(5) *Tendency:* What it actually was according to the index number of the United States Bureau of Labor Statistics between 1900 and the present.[1]

Assumption (5) means that, instead of considering purely hypothetical cases, we are now to study what would have happened if we had had stabilization started January, 1900.

This affords a very severe test; for the period taken

[1] Except that, beginning with January, 1913, I have substituted the special index number of responsive commodities described in Appendix I, § 3. The difference in results between the two index numbers is not great.

is one of unusual variability of the price level before the war (although of less average variability than the 1% every two months, assumed in the standard hypothetical case).

(*b*) *Calculation of stabilized index numbers.* The following table shows the first stages of the calculation:

1900	I	II		III
	Stabilized Index Number [1]	Influence of Adjustment of Dollar's Weight		Tendency (Percentage Change of Actual Index Number)
		Two Thirds of the Influence felt in First Following Interval	One Third of the Influence felt in Second Following Interval	
Jan. 1 . . .	100			
During Jan. and Feb. . . .				+ 1.35
Mar. 1 . . .	101.35			
During Mar. and Apr. . . .		−.67		− 1.33
May 1 . . .	99.35			
During May and June . . .		+.43	−.33	− 1.88
July 1 . . .	97.57			
During July and Aug. . . .		+.67	+.22	− .64
Sept. 1 . . .	97.82			
During Sept. and Oct. . . .		+.67	+.33	+ .92
Etc.	99.74			

[1] This column also shows (by subtracting 100) the *deviation* from par, and the *adjustment* (except that this is limited to 1% by the brassage).

Let us follow the above calculations in detail, taking the index numbers cited from the bulletin of the United States Bureau of Labor Statistics. Changing them by simple proportion so that the price level of January, 1900, when the system is supposed to have been adopted,

shall be 100, the index number for March 1, 1900, is found to be 1.35% above this par of January. This is the signal for raising the weight of the redemption bullion 1%, since the brassage will not permit the full increase of 1.35%. This 1% increase in the weight of the dollar, by assumption (3), affects the index number by 1%. Also, by assumption (4), $\frac{2}{3}$ of this influence is felt in the following adjustment interval (ending May 1) and $\frac{1}{3}$ in the next (ending July 1).

The May index number will then combine the effects of the $\frac{2}{3}$ of 1% or .67% downward *influence* as well as of the downward *tendency* during this interval which is −1.33. The stabilized figure for May is, therefore, 101.35−.67−1.33, or 99.35.

This figure is below par, and calls, in turn, for a decrease in the weight of the dollar. In this case, however, the brassage limitation does not come into play. The *deviation* is −.65, the *adjustment* −.65, and the *influence* +.65 of which two thirds, or +.43, follows in the next interval, and the remaining third, +.22, follows in the interval next but one. The July stabilized index number is found from that of May as follows: 99.35+.43−.33−1.88=97.57.

The stabilized and unstabilized index numbers are:

	Unstabilized	Stabilized
Jan. 1	100.00	100.00
Mar. 1	101.35	101.35
May 1	100.00	99.35
July 1	98.11	97.57
Etc.		

Figure 12 gives, for comparison, the curves from 1900 to 1918 for this stabilized index number and for the actual course of prices in that period.

Except for the period when the war begins (as it does at the close of 1915) to produce a great effect on the

price level, stabilization works almost perfectly,[1] keeping the index number within 2% of the original par during two thirds of the time, within 3% of par six seventhes of the time, and within 4% all of the time.[2] During this same period, on the other hand, the unstabilized index number wandered from the starting point 30%.

Beginning with the fall of 1915, however, the upward tendency becomes too strong and, in spite of the stabilization mechanism, the stabilized price level rises in the diagram 86% above par. This, of course, is a small rise as compared with the rise which actually occurred, as the index number rose 200% above the original starting point.

The deviation from par of the stabilized index number would be slightly less if the brassage were 2% and less still if it were 3%, etc. Yet I doubt whether the brassage should be increased much, if any, above 1%, (1) because presumably we do not now need to provide against a contingency so remote as a repetition of such a situation as that caused by the Great War, and (2) because, if another such situation should develop, a partial stabilization is the most we could expect. The fiscal necessity of the Government is then so paramount a necessity that inflation is probably unavoidable. If the Government itself succeeds in avoiding direct inflation, the people, in subscribing to bonds by borrowed money, will bring about an indirect inflation.

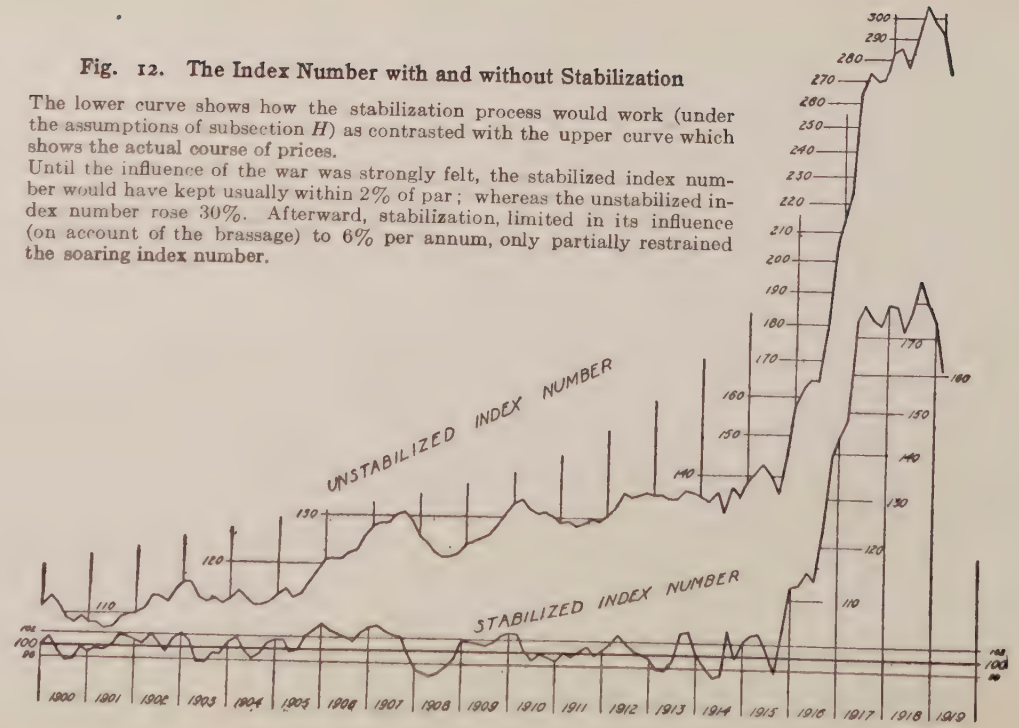
[1] It should be remembered that this stabilization of wholesale prices would carry with it the stabilization of retail prices as explained in Appendix I, § 3. In fact, as retail prices change sluggishly, their index number would doubtless keep even closer to par than that of wholesale prices.

[2] This close conformity to par is maintained in spite of the fact that, as already noted, the "lag" assumed is much greater than we may reasonably believe is the truth. In fact the conformity would be close even if the lag were much longer. Assuming that the influence of each adjustment came even a full year later, the index number would (up to the close of 1915 when the great influence from the war began) keep within 3% of par half of the time, within 5% two thirds of the time, and within 10% nineteen twentieths of the time.

Fig. 12. The Index Number with and without Stabilization

The lower curve shows how the stabilization process would work (under the assumptions of subsection *H*) as contrasted with the upper curve which shows the actual course of prices.

Until the influence of the war was strongly felt, the stabilized index number would have kept usually within 2% of par; whereas the unstabilized index number rose 30%. Afterward, stabilization, limited in its influence (on account of the brassage) to 6% per annum, only partially restrained the soaring index number.



Of course the foregoing figures do not pretend to give, with absolute exactness, what would have happened under stabilization, for the reason that the five hypotheses do not state the exact conditions which would obtain. Thus the *tendency* is of course ever changing. The *influence* of the adjustment in weight of the dollar would doubtless be distributed somewhat differently from the distribution assumed in the figures. But the stabilization process, by its very nature, adapts itself to whatever situation is presented and relentlessly pursues and ultimately eliminates each deviation as it occurs. The figures give us as good a picture as we can secure, until the actual plan is inaugurated, of what the general behavior of the index number would be.

This behavior would usually be very stable. For to keep the price level within two or three per cent of par as is here done, is, for all practical purposes, to keep it perfectly stable. The only evils of instability which are really felt are the cumulative evils of a long sustained rise or fall. In particular, as we have seen, demonstrations of popular unrest, like populism during falling prices and I. W. W.ism during rising prices, develop only after the fall or rise has proceeded both long and far; and this could not happen with the price level closely tethered to par.

10. A Tentative Draft of an Act to Stabilize the Dollar

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

(*Replacement of Unstable, by Stable Dollar*)

Sec. 1. That at three o'clock, Eastern time, in the morning of January 1, 1921, the gold dollar of the United States shall cease to be a constant quantity of gold of variable purchasing power, and thereafter shall be a variable quantity of standard gold bul-

lion of approximately constant computed purchasing power.

Said quantity of standard gold bullion, constituting a gold dollar at any given time, shall be ascertained and fixed, from time to time, by the computation and use of index numbers of wholesale prices as hereinafter set forth.

Provided: That the gold dollar shall remain 25.8 grains of standard gold until some other quantity is fixed under this Act.

(*Computation of Index Number and Its Deviation from Par*)

Sec. 2. That for the purpose of computing approximately the fluctuations of various wholesale prices in the United States after the year 1920, and of computing index numbers such as will approximately measure the average of such fluctuations, and of computing therefrom the approximate fluctuations in the purchasing power of gold, the Bureau of Standards (or Bureau of Labor Statistics) hereinafter referred to as the *Computing Bureau*, shall proceed as follows:

(*a*) From the list of commodities and the quantities thereof marketed at wholesale in the United States in 1909, heretofore compiled by the Bureau of Labor Statistics from data of the Census of 1910 and other data and published in Bulletin No. 181, *Wholesale Prices Series* No. 4, the Computing Bureau shall, immediately after the passage of this Act, make up a *list of selected commodities* comprising about 100 commodities (not less than 75 nor more than 125) deemed by it to be the most suitable (as to importance and otherwise) to be used for computing the said index number.

(*b*) Immediately after December 25, 1920, the Computing Bureau shall compute, from the best accessible data, the average price of each of these commodities for the year 1920 (to December 25).

(*c*) From the several average prices, so computed for 1920, and the quantities so listed for 1909 by the Bureau of Labor Statistics, the Computing Bureau shall compute an ideal composite "goods-dollar" for reference purposes consisting of such quantities of the several selected commodities, proportional to the quantities so listed by the Bureau of Labor Statistics, that their aggregate value, at the average prices so computed for 1920, shall equal one hundred cents. (This selection of the price level of 1920 as the base or par is, of course, merely illustrative. See Appendix I, § 4.)

(*d*) From average wholesale prices computed from price quotations taken on the first Wednesday (or, if that day be a holiday, the next business day) of the months January, March, May, July, September, November of 1921 and each year thereafter, the Computing Bureau shall speedily compute the value, in cents, of the composite "goods-dollar," and such value in cents shall be the *index number* of prices for that date.

(*e*) The Computing Bureau shall compute the deviation from par of such index number by subtracting one hundred cents from said index number. Thus if the index number is $1.01 the *deviation* is 1 cent or 1% above par, and if the index number is $0.98 the deviation is 2 cents or 2% below par.

(*Transmission Thereof to Bureau of the Mint*)

Sec. 3. The index number, deviation percentage, and all the data from which they are computed shall (unless delayed by unavoidable causes) be transmitted by the Computing Bureau to the Bureau of the Mint, within one week from the day to which the data relate.

(*Calculation of the Correction of the Dollar's Weight*)

Sec. 4. That the Bureau of the Mint, upon receipt from the Computing Bureau of such percentage deviation, shall forthwith calculate a percentage correction or adjustment to be added to, or subtracted from, the

then weight of the dollar. Said adjustment (provided it shall never exceed the "brassage" charge of 1% described below) shall be equal to the percentage deviation.

(*Proclamation Thereof*)

Sec. 5. The Bureau of the Mint shall then forthwith give public notice that, on and after the day next following such notice, and until changed by further like notice under this Act, the number of grains of standard gold so computed shall constitute the gold dollar of the United States; and thereupon the number of grains of standard gold in the gold dollar of the United States shall be fixed as prescribed in such notice.

(*Unrestricted Issue of Certificates for Gold (Free Coinage)*)

Sec. 6. That after December 31, 1920, the Bureau of the Mint shall receive, subject to a "*brassage charge*" of one per cent and subject to such conditions and limitations as are now provided by law touching the receipt of gold bullion to be coined, all gold bullion offered to it and shall pay for the same with "gold bullion dollar certificates" described hereinafter at the rate of one dollar for the number of grains of standard gold in the dollar as then last fixed by or under this Act and (as to any balance less than one hundred dollars) in lawful money.

(*Unrestricted Redemption of Certificates in Gold*)

Sec. 7. That after December 31, 1920, the Mint Bureau shall receive all gold bullion dollar certificates tendered to it and shall forthwith pay for the same, dollar for dollar, in standard gold bars at the rate of one dollar for the number of grains of standard gold in the gold dollar of the United States (as fixed by or under this Act for the time of such receipt) and (as to any balance less than five ounces of standard gold) in lawful money.

(DETAILS)

(*Conversion of Coin into Bullion*)

Sec. 8. That after the passage of this act no gold coin shall be struck by the United States. The Secretary of the Treasury shall provide, by rules and regulations to be issued within three months after the passage of this act, for the conversion before January 1, 1921, of gold coin of the United States owned or acquired by the United States into bars of standard gold each containing not less than five ounces, and for like prompt conversion of all like gold coin thereafter acquired by the United States.

(*To facilitate the withdrawal of gold coin from circulation into the Treasury through the Federal Reserve and National Banks*)

Provided: That the United States, under such rules and regulations as the said Secretary may prescribe, shall receive all standard gold coin of the United States offered to it and pay for the same in lawful money at the rate of ten dollars and one cent of lawful money for every ten dollars of standard gold coin so offered from the date of this act to December 31, 1920, inclusive, and at the rate of one dollar for every dollar of standard gold coin offered to it thereafter. Such payment shall be made in the gold bullion dollar certificates herein authorized and (as to any balance less than one hundred dollars) in lawful money.

(*Conversion of Old Certificates into New*)

Sec. 9. That within three months after the passage of this act the preparation, issue, and paying out by the United States of present gold coin certificates shall cease. For all gold coin certificates then owned or thereafter acquired by the United States there shall be substituted, dollar for dollar, gold bullion dollar certificates certifying that

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" the United States of America will pay the bearer on demand $100 in standard gold bars of not less than 5 ounces each and any smaller balance in any lawful money."

Upon such substitution such gold coin certificates shall be destroyed.

(*To accelerate said correction at the start especially through the Federal Reserve and National Banks*)

Provided: That the United States, under rules and regulations to be prescribed by the Secretary of the Treasury, shall receive all gold coin certificates offered to it and pay for the same in lawful money at the rate of ten dollars and one cent of lawful money for every ten dollars of gold certificates so offered from the date when their issue ceases to December 31, 1920, inclusive, and at the rate of one dollar of lawful money for every dollar of such certificates so offered after December 31, 1920.

(*Government Gold " Reserve " and " Surplus "*)

Sec. 10. That the Secretary of the Treasury shall divide all the gold against which gold coin certificates and gold bullion dollar certificates are outstanding at 3 A.M. January 1, 1921, into two parts, one part to be known as the " reserve " against outstanding gold bullion dollar certificates and equal to 50% of the value of the gold certificates then outstanding and the remaining part to be known as the " surplus," in excess of said reserve.

This remainder or " surplus " shall be forthwith transferred to the general fund of the Treasury as the initial profits of the new system.

The " reserve " shall be maintained daily, as nearly as possible at 50% of the gold bullion dollar certificates outstanding from time to time.

If, on any date, the reserve falls short of 50% it is to be restored by withdrawing from circulation and cancelling gold bullion dollar certificates.

If, on any date, the reserve exceeds said 50% it is to be restored by issuing, and putting into circulation, the requisite number of new gold bullion dollar certificates.

The Secretary of the Treasury is authorized to make said withdrawals of certificates from circulation by withdrawing from the Government deposits in National Banks, and to issue certificates and place them in circulation by adding to those deposits.

(*Certificates Available for Bank Reserves*)

Sec. 11. That all provisions of existing banking laws of the United States regulating the holding of gold reserves, including reserves of any Federal Reserve Bank, National Bank, or other bank, shall be deemed to be satisfied by such holding of gold bullion dollar certificates.

(*Legal Tender*)

Sec. 12. (*a*) That gold coin of the United States shall not be a legal tender in payment of debts falling due after December 31, 1920.

(*b*) That all debts, public and private, falling due after December 31, 1920, including debts theretofore created and expressed in dollars of "gold coin of the present standard of weight and fineness," or expressed in words of like import, shall be payable in standard gold bars at the rate in grains per dollar fixed by or under this Act for the time when each debt falls due, and the balance, if any, less than five ounces, in lawful money. Such standard bars shall be lawful money and a legal tender for this purpose.

(*Publicity*)

Sec. 13. The Computing Bureau shall, as promptly as possible, make public in suitable public documents all the pertinent facts and figures concerning the calculation of the index number and its percentage deviation

from par, including the market quotations for the constituent commodities. The Mint Bureau shall likewise make public its findings as to the adjustment of the dollar's weight.

(*Financing the Administration of This Act*)

Sec. 14. That a sum equal to the initial profit as defined in Sec. 10, or so much thereof as may be necessary, is hereby appropriated and is made available until expended as the Secretary of the Treasury shall direct for all expenses necessary for the administration of this Act; and the Secretary of the Treasury is authorized to use the receipts from time to time from the "brassage charge" as defined in Sec. 6, for the same purpose.

(*Future Revisions of Index Numbers*)

Sec. 15. That immediately after the data of the census of 1920, and other subsequent censuses respectively, are available, the Computing Bureau, from such data and the best other available data, shall revise the list of selected commodities and designate a revised composite "goods-dollar" by the same method as hereinbefore described and such that, at the moment of revision, the value of the new or revised goods-dollar shall be equal to that of the old.

(*Penal Code Amendment*)

Sec. 16. That Section 147 of the Penal Code approved Mar. 4, 1909, defining "obligation or other security of the United States" is hereby amended to include the gold bullion dollar certificates hereby authorized.

(*Repeal of Former Acts*)

Sec. 17. That all Acts and parts of Acts inconsistent with this Act are hereby repealed.

. . . . . .

The above Act assumes that a reasonable banking system, such as our Federal Reserve System, already exists under which deposits subject to check will be kept in some reasonable relation to bank reserves.

The Federal Reserve Board could assist in the prompt and efficient operation of the new system by having due regard to the rise and fall of the Index Number, as suggested by Mr. Paul Warburg. This would help its adjustment of the rate of discount and its general loan policy to be such as to keep the volume of individual deposits subject to check approximately proportional both to bank reserves and to the Government gold reserve against gold bullion dollar certificates.

APPENDIX II

DISAPPROVAL OF THE PLAN

1. Misunderstandings

A. Introduction. Some readers will wish to know what objections have been found or alleged against stabilizing the dollar.

The chief of these have already been disposed of in the text. The other objections are to be found, stated in the objectors' own language, in articles cited in the bibliography of Appendix V. Answers by me or other writers are cited in the same bibliography.[1]

Nevertheless it seems desirable, in order to make this book complete, to renew the arguments here. I shall therefore state and answer the alleged objections as fully as space permits. If difficulties still remain in any reader's mind, I hope he will do me the favor of communicating with me to the end that I may, if possible, clear them up by correspondence.

I shall try to treat seriously and on its real merits each objection which has been offered and to show how, in every case, the objection falls to the ground.

Most of the alleged objections turn out, on examination, to be mere misunderstandings. Of the remaining objections, most consist, at bottom, of unreasonable hostility, due to prejudice and fear of disturbing the *status quo*. The few objections still remaining amount simply to emphasizing the fact that the plan does not attain an ideally perfect standard of value.

[1] See especially my answers to objections in the *New York Times*, December 22, 1912, and "Objections to a Compensated Dollar Answered," *American Economic Review*, December, 1914.

In this section I shall consider the misunderstandings.

B. "*The plan only corrects those deviations in the purchasing power of the dollar which are due to gold causes,*" and not those due, for instance, to causes connected with credit or commodities. On the contrary, it corrects all deviations indiscriminately. The criterion is the index number, and the plan operates against any deviation from par of the index number whether that deviation is due to gold or to any other cause whatsoever.[1] The reason, of course, is that all dollars are interconvertible so that if the value of the gold dollar is kept constant, that of every other dollar must be constant also.

C. "*It assumes 'the gold theory' — that high prices are due to the abundance of gold.*" No; it merely assumes that the purchasing power of gold does change relatively to commodities. It does not assume any particular cause of these changes. Gold depreciation relatively to commodities may be due, for instance, to scarcity of commodities; it may be due to the inflation of money other than gold, circulating alongside of gold, such as silver and paper money; it may be due to credit inflation; or it may be due to causes speeding up the velocities of circulation of money and credit.

D. "*It assumes the quantity theory of money.*" The impression that the plan is dependent on acceptance of the quantity theory of money is presumably due to the fact that I have espoused that theory (in a modified form) in my *Purchasing Power of Money*. But there is nothing in the plan itself which could not be accepted equally well by those who reject the quantity theory altogether. On the contrary, as one opponent of the quantity theory has pointed out, the plan should seem even simpler to those who do not accept the quantity theory but believe that a direct relationship exists between the purchasing power of the dollar and the

[1] As to credit in particular see Appendix 1, § 7.

bullion from which it is made, than to believers in the quantity theory.

It will be clear to any one who follows the reasoning and explanations in this book,[1] that the only money theory assumed is that common to all theories, and accepted universally; namely, that a large quantity of gold will buy more goods than a small quantity — a pound, than an ounce, for instance — and that an increase of the gold in a dollar will, somehow, increase the dollar's purchasing power. As to the exact process by which this acknowledged result is attained we need have no concern.

Personally, like the great majority of economists, I believe that this process is through the fact that increasing the weight of a dollar decreases the number of dollars in circulation (not only of gold but of fiduciary money and bank credit). But any one who reasons on some other theory cannot avoid reaching the same result; namely, that *the plan would work*, provided, as I have said, he admits simply that the heavier the dollar the more valuable it is.

To take an example cited in Chapter IV, if the Mexicans should change the weight of their dollar to the weight of ours, the price of wheat and other things would become about the same on both sides of the Rio Grande, just as they are at present (except for the tariff) the same on both sides of the Canadian border where the dollar is of the same weight on both sides.

E. "*It contradicts the quantity theory.*" This objection, the opposite of the last, has been raised by some who believe in the quantity theory but imagine that the operation of the plan could not affect the quantity of money at all or not in the degree needed. But, as explained in the text (Chapter IV, § 9, and Appendix I, § 9), it is not assumed that a 1% change in the weight of the gold dollar will necessarily affect

[1] See Chapter IV, §§ 4–9.

either the quantity of money or the price level by *exactly* 1%. It is only necessary to assume that it works in the right direction and that, if the first adjustment proves insufficient, its insufficiency will be registered in later index numbers and, in consequence, it will be reënforced by subsequent adjustments as required.

That a change in the weight of the dollar will change the number of dollars has been made evident already. It will affect the number of gold dollar certificates (see Chapter IV, § 7, and Appendix I, § 1) and the number of dollars of circulating credit (see Appendix I, § 7).

F. "*It aims to fix all prices.*" On the contrary, it does not aim to fix *any* price, except the price of gold which *is* already fixed — though wrongly so — in our present system. The prices of wheat and sugar and everything else would be as free as now to vary relatively to the general level and to each other. The adjustment of the dollar would control only the *scale* or "level" of commodity prices and not interfere with the freedom of their relative movements.

Only the general level is fixed, a rise in one commodity being balanced by a fall in others. A fixed sea level does not prevent wave motions.

As Treadwell Cleveland, editor of the *Newark Evening News*, well says, "the aim is by no means to freeze all ratios of exchange fast" or to compel all prices in dollars to be "petrified into everlasting immobility."

The upper curve of Figure 13 shows the actual market price of wheat in terms of gold in contrast with the middle curve which shows the price of wheat as it would have been under stabilization, *i.e.* its price in terms of the commodity standard. The lower curve shows the course of the general price level in terms of gold. The middle curve exhibits abundant freedom to fluctuate, the fluctuations being due to harvests and other conditions connected with the production of this specific commodity, wheat. The upper curve shows

these same fluctuations ; but it shows also *other* fluctuations, mostly upward, due to the movement in general prices, which means the opposite movement of the

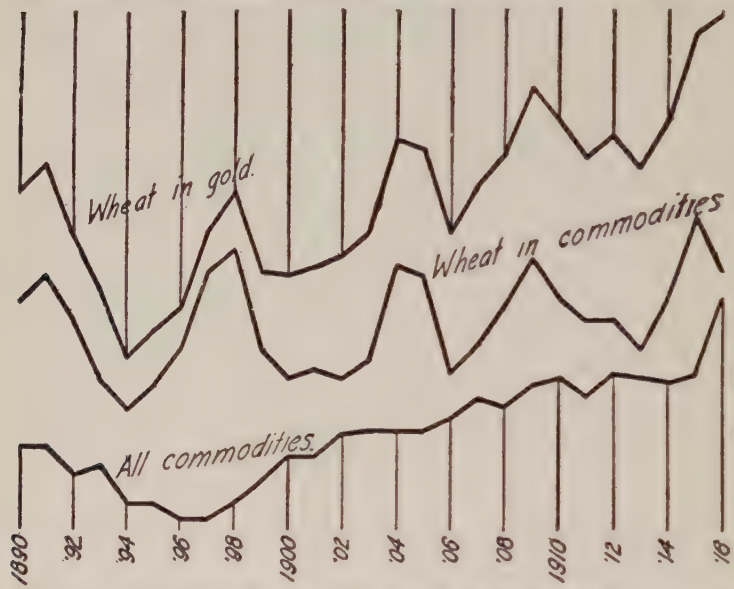

Fig. 13. The Price of Wheat in Terms of Gold and in Terms of Commodities

The curve for " wheat in gold " represents the movement of the actual market price of wheat.
The curve for " wheat in commodities " is the same as that in Figure 11 and represents the real purchasing power of wheat.
The curve for " all commodities " is repeated from Figure 10. We may say that the upper curve is a compound of the other two, the lower curve containing the monetary element and the middle curve the wheat element. The year to year fluctuations in the price of wheat seem to be due chiefly to wheat, while the general upward trend is chiefly due to money.
The middle curve shows how the price of wheat would behave if the dollar were stabilized. This price would fluctuate almost as much as it does now.

dollar. The upper curve is compounded, as it were, of the two lower curves, one representing changes in wheat, the other representing changes in the purchasing power of the dollar.

G. "It would interfere with supply and demand." Rather would it simply disentangle the supply and demand of, say, wheat, from the supply and demand of the money medium. As things are now the price of wheat always includes, besides the effects of the supply and demand of wheat, the effects of the supply and demand of gold, of credit, etc.

A study of the two curves of Figure 13 shows how the two sets of phenomena are now entangled as well as how natural is the error of overlooking the money ingredient in the price of wheat. In their year-to-year changes the two curves agree in moving up together or down together in 24 cases out of 26! A wheat merchant could doubtless see, for each of these 24 changes, a definite reason in the wheat market, without any apparent need to invoke the monetary element. He would be able to say that between 1914 and 1915, for instance, the price of wheat rose rapidly because of certain specific war conditions affecting wheat. And he would be substantially right qualitatively. Only a quantitative analysis such as Figure 13 gives could disclose the fact that of the 27% rise, only 25% was due to the causes he saw and 2% was due to the depreciation of the dollar.

Under a stabilization system the price of wheat would have gone up 25% as in the middle curve. The supply and demand of wheat would not be interfered with but simply separated from monetary fluctuations which would be registered in the price of gold.

Under our present system, the price of gold is cut off from the operation of supply and demand altogether. If gold were as plentiful as the pebbles on the beach, its price would, under the present arbitrary system, remain immovable at $20.67 an ounce!

This fixity of the price of gold might itself be called an arbitrary interference with natural supply and demand, as was indicated in Chapter V, § 3. Were the natural law of supply and demand allowed to take its

course and not artificially restrained, the changes in the supply of, and demand for, gold and its substitutes would make themselves felt in the price of gold, and not in the prices of goods, as at present they are forced to do.

H. "*It is a plan to control the value of gold.*" The valorization of coffee in Brazil, or the valorization of silver as proposed by some "friends of silver," has nothing in common with the plan here proposed. The latter plan does not attempt to impound gold. It does not attempt anything so colossal or useless as to raise the value of gold by cornering and storing it or by any other means. It does not aim to affect at all the value of gold *per ounce*, but aims simply to change the quantity of it in *a dollar*. It is the dollar, not gold, which we are trying to stabilize. The distinction is as important as the distinction between valorizing or fixing the price of a pound of sugar by controlling the sugar market, and adjusting the number of pounds of sugar to make up a dollar's worth, whatever the market conditions may be.

I. "*It works only through the flow of gold.*" This misunderstanding is common. It pictures the regulative machinery as though the flow of gold into and out of circulation were the main factor. It implies that the only, or chief, effect of a change in the price of gold is to divert the flow of gold from one channel to another, overlooking the factor under a definite reserve (see Appendix I, § 1), — that a change in the price of gold and in the weight of a gold dollar changes the number of dollars in a given physical mass of gold.

Laboring under the above mentioned misapprehension, one correspondent imagines that if all the world adopted the plan the result would be to alternately "dump" immense quantities of gold on to the very limited jewelry market or denude that market of all its gold, and that the system would demoralize the gold market and ultimately break down, for the jewelry market is too small to be used as a regu-

lator of the gold of the world. The tail could not wag the dog.

The truth is, of course, that, even if there were no jewelry use whatever, there would be ample regulation. Thus a lowered gold price, or raised dollar weight, can reduce any stock of gold, however large, into a small number of dollars simply by enlarging each dollar; while, contrariwise, a raised gold price, or lowered dollar weight, can multiply any stock of gold, however small, into an ample supply simply by breaking it up into a larger number. It is like multiplying the loaves and fishes, — except that there is nothing miraculous about it, since small dollars will feed our monetary needs as well as larger dollars, provided they buy as much.

A correspondent calls attention to the fact that, at critical times like that of the war, each nation tends to grab gold and reasons that this would destroy the regulatory action. On the contrary, while such action does destroy the regulatory action of our *present* system, thus revealing one of its worst defects, it would not affect that of the proposed plan. As explained in Appendix I, § 8, the stabilization system becomes independent of foreign influence. Under it we could let other nations take any part of our gold they chose and the remainder, by sufficient subdivision, would meet our needs. Likewise we could withstand any flood of gold — and without suffering inflation, or shutting gold out as did Sweden, — simply by enlarging the dollars and so diminishing their number.

J. "*It would shift to the Government the losses now borne by private contracting parties.*" This confuses the losses and gains on contracts and understandings expressed *in terms of* gold with the losses or gains to holders of *actual gold.* Except where the Government is itself a party to contracts, the losses and gains of contracting parties do not affect the Government Treasury.

It may be added, incidentally, that if it were true that

such a shift to the Government of all private gains and losses were really effected by stabilization the net resulting burden on the Government would be just zero! For the same number of dollars that the private creditor now loses from depreciation the private debtor gains and *vice versa*.

This is the reason that, above, in referring to contracts, the phrase "losses *and* gains" was used whereas, in referring to physical gold, the phrase "losses *or* gains" was used. When gold depreciates its holders suffer loss and no one else has any corresponding gain, just as when a case of eggs or a box of fruit spoils the owner loses and no one else gains. Contrariwise when gold appreciates the owner of gold gains and no one else loses.

This slight gain *or* loss from holding gold *is* transferred, by the stabilization plan, to the Government (or rather, is transferred from the pockets of the people back to their pockets through increase or decrease of taxation) as was shown in Appendix I, § 1, *D*. But the colossal gains *and* losses to contracting parties are not so transferred by stabilization. They are simply destroyed altogether.

K. "*It would make a pretext for raising prices.*" This idea is probably an echo of the fact that dealers have often used the excuse that prices in general were high to raise their own. The excuse was usually valid. Retail prices must adjust themselves to wholesale prices and *vice versa*.

But it is precisely this excuse which the stabilization system would take away; for the general price change which it presupposes is avoided. It would certainly be a curious excuse for a dealer to tell his customers that he had to change the price of coal because, last month, the mint price of gold had been changed with the expressed object of making such changes in other prices unnecessary!

L. "*It would 'tamper' with the standard of value.*" In truth it would prevent the standard of value from

being tampered with by all sorts of influences which at present do tamper with it constantly. The discovery of gold in California tampered with the standard of value; the cyanide process of extracting gold tampered with it, and so did the abolition of bimetallism, the introduction of the gold exchange standard, the rapid growth of bank deposits, and the inflation of the currency in war-time.

At first sight the plan seems to many people a plan to *change* the dollar, while in fact it would keep the dollar from changing. It would change the present *system*, the fault of which is that it lets the value of the dollar change. The plan aims at an invariable dollar. If preventing the dollar from changing is tampering with the standard of value then the Bureau of Standards is constantly tampering with weights and measures.

One sarcastic objector asks: "Why not change the weight of a pound of coffee?" If the dollar served the purpose merely of a unit for weighing gold, it would be as absurd to alter it as to alter the number of ounces in a pound of coffee. A unit of weight ought certainly to remain invariable in weight. But we do not need the dollar as a unit of weight. We need it as a unit of value, and the trouble is that its constancy in weight makes it inconstant as a unit of value.

M. "*Changes in the weight of the dollar cannot affect its value because only Government fiat can fix the value of money.*" Can any one believe that if the weight of a dollar were increased from the present twentieth of an ounce to an ounce, or a pound, or a ton, or the entire mass of gold in the world, that the dollar would buy no more than it does at present? If any one by taking a ten-dollar gold certificate to the Sub-Treasury or Assay Office could get with it a cartload of gold, would that certificate not command more, not only of gold, but of things in general than it does now?

As to Government fiat, the mere calling pieces of paper by certain names without reference to the amount

in circulation has been proved both by theory and by experience to be illusory.

N. "*It is a fiat money system.*" This misunderstanding is the opposite of the last and even more absurd. It is not a fiat money system; for the paper money, under it, is redeemable and dependent for its value on the gold in which it is redeemed.

2. Alleged Defects

A. "*A goods-dollar is not ideal.*" Doubtless this is true. But our present gold dollar is still further from the ideal! It is significant that those who offer this "objection" do not suggest some third kind of dollar which might, practically, be used.

The discussion of an ideal dollar is purely academic. It will be time enough to discuss the merits of a marginal-utility unit of value, a labor unit, or a unit consisting of a given fraction of the National income, when any of these units can be statistically fixed, that is, when an index number in terms of such a unit is forthcoming. Until that time the ideal standard, if such there be, has about as much practical availability for human use as the money of the planet Mars. The only practical question is that already discussed in Appendix I, § 3, as to what is the best index number available.

It might be advantageous, were it possible, to distinguish between that part of a given change in the value of the dollar which is due to money and that part which is due to goods. And this could be done by the plan if there were any reliable index number of "absolute value." By employing such an index number, if it existed, we could stabilize the dollar "absolutely." Practically, of course, we can only measure the value of money relatively to other goods.

This same answer applies to those who have the idea that, instead of a constant price level, a slightly falling or a slightly rising or a cyclically changing price level

is more ideal. If those who set up such standards in theory will set them up in practice, *i.e.* will show, in figures, exactly *how much* the price level ought to change, it will be as easy to make the index number follow that prescribed course as to keep it uniform. This can be accomplished by precisely the same methods as those described above for stabilization. Let us, for example, assume that, ideally, prices ought to rise 1% per annum instead of remaining constant. It would evidently be as easy to apply exactly the same method of regulation as that described in Chapter IV except that, instead of hewing to the 100% line, we would hew to a *moving* par. If, at the start, the par were 100%, a year later it would be 101%. At that time, therefore, if the index number should happen to be 101% no change in the dollar's weight would be made; if, instead, the index number should be 102, or 1% too high, the dollar's weight would be increased 1%; if, instead, the index number should be 100, or 1% below par, the dollar's weight would be decreased 1%. Likewise if the ideal course of prices could be shown to be first in one direction and then in the other, all we should need to do would be to map out that course in figures and hew to that line.

B. " *People could 'contract out,'* " *i.e.* they could frame their contracts in terms of ounces of gold or any other units than the new dollars. So they could, — just as they can now. But they wouldn't — not even as much as they do now! There would be no need for such action and no desire for it. " Contracting out " is a phenomenon which is frequent only when it is necessary to escape from some flagrant case of *instability* as in the days of greenbacks or of Colonial paper money. It was such a case, or the danger of it in the '90s, which gave rise to the " gold clause " in bonds.

When the railways adopted " standard time " there were those who predicted that many people and communities would refuse to shift their watches. One country town in Maine did! But more than 99% of

the country were led by the convenience of the new system to adopt it, just as, later, they adopted the similar shift for "daylight saving," at which time also similar predictions of failure were made.

If any contracting parties should fancy that a stabilized dollar was less suitable to their needs than some other standard, their preferences should be and could be gratified. But such people would be very few and far between.

C. "*It would be destroyed by war.*" It is true that war is apt to put a strain on whatever monetary system exists at the time. It does so when the fiscal needs of the belligerents require or seem to require resort to inflation. It is also true that there would be more strain on a system which combats inflation than on one which yields to it. Inflation affords the cheapest and easiest, although the worst, way to pay for a war. It is, therefore, inevitably the resource of war finance when all others fail.[1] As we have seen (Chapter II, § 9) it has many subtle forms. If the dollar is to be kept stable, it will be necessary to raise the whole revenue of the Government in ways other than by inflation (*i.e.* by taxes or by loans out of the savings of those who make the loans). If the Government or the banks or the people who finance the Government cannot, or will not, finance it completely, without resort to inflation, stabilization will have to be sacrificed.

We have already noted (Appendix I, § 7, *A*) how this breakdown would come about under paper money inflation. The same principle would apply under any kind of inflation (by paper issues of the Government, or of authorized banks, or by creation of new bank deposits put to the credit of the Government, or to the credit of individuals who borrow of banks to loan to the Government).

[1] Resort to inflation (which puts the burden of the war in the form of the High Cost of Living on those with relatively fixed money incomes instead of on the tax payer) is, at bottom, a reversion to Colbert's idea of Government Finance, "the art of plucking the goose with the least amount of squealing."

In short, stabilization and inflation are mutually incompatible. If stabilization is to be retained during a war emergency, inflation must be sacrificed as a method of war finance. Or, if inflation is to be resorted to, stabilization must be sacrificed. When the emergency comes choice between the two must be made.

In all ordinary wars there is no need of inflation and the stabilization process could go on unmolested. But if we were to have another world war and if the fiscal need were so great that there was, or seemed to be, no way to secure all the needed funds without resort to inflation, then, it is quite true, the stabilization machinery, if left to work, would break down. It would be better under such circumstances not to leave it to work but to suspend it temporarily just as the Bank Act for the Bank of England is temporarily suspended at critical times.

In practice, an intermediate course between a stabilization left helpless to break down, and its suspension would probably be the result. The brassage limitation would prevent perfect stabilization when the tendency of prices to rise was greater than the brassage, and yet the rise could be mitigated and sufficient revenue from taxes could be secured to keep the system thus working at half speed, so to speak. This is illustrated by Figure 12.

A friend insists that a stabilization system must be devised which will withstand *any* war. One might as well say that an automobile should be built to withstand any collision.

Furthermore, it should be emphasized that the *present system* not only contains the danger of monetary depreciation in war time among warring nations but involves neutrals as well. In fact the war inflation in the United States was almost wholly suffered while we were neutral and before we entered the war. It was a secondary effect from European inflation and the upset of international trade through which we were inundated by gold imports. From such a catastrophe

in future wars, stabilization would deliver us; for, as shown (Appendix II, § 1, *I*), the only result of an influx of gold would be to make our gold dollars larger. Our price level would remain intact, for the neutral would not be under the necessity of paper and credit inflation as a fiscal expedient.

Another sort of answer to this objection is the League of Nations! We are not likely for a long time, if ever again, to have such an exigency as a World War. In short, the full answer to the objection of inadequacy in war time is:

(1) In all ordinary wars stabilization would be adequate.

(2) Wars in which it would not be adequate are now extremely unlikely.

(3) In such an emergency the system might still work "at half speed," which would be better than nothing.

(4) Or, it could, if necessary, be suspended, which would leave us no worse off than under the present system.

(5) It would, in any case, safeguard the standards of non-belligerent nations.

(6) In no case would it leave us worse off than before.

D. "It could not check rapid changes." Owing to the narrow limits, *e.g.* 1% or 2% as stated, imposed on bi-monthly adjustments of the dollar's weight, it is quite true that a sudden and strong tendency of prices to rise or fall, should such occur, could not be completely checked. If, for instance, prices were tending to rise 18% per annum and the plan permitted no more rapid shift than 12% per annum, this would leave 6% per annum uncorrected.

But this 6% would be only one third the rate at which prices would rise if wholly uncorrected. Half a loaf (or, in this illustration, two thirds) is better than no bread.

Moreover, such cases are extreme and rare. When they do occur there is all the keener need for their

mitigation. If an 18% correction is needed we cannot argue that we ought to make no correction rather than correct by 12%! Furthermore it should be noted that ultimately, of course, after the rapid spurt had abated, the accumulated weight of the dollar would overtake the escaped price level and bring it back to par.

E. "It is too inelastic." This is the opposite of the last objection. The one objector who makes this claim thinks the limitation complained of in the preceding objection is a positive advantage of the plan. He would prefer to limit the possible change of the weight of the dollar to 2% per annum! His idea is that only secular, or long continued, changes in the purchasing power of money are injurious while shorter cyclical changes are desirable as an expression of the changing spirit of business.

To me this is more fanciful than practical. The "credit cycle" is one of the very evils which stabilization aims to remedy. The satisfaction the enterpriser has while the boom phase lasts is partly gained because of false hopes and therefore nullified later when the depression comes — like the joys of a drunken debauch — and partly gained at the expense of others of more "fixed" incomes — a species of social injustice.

I have little doubt that crises and panics would be practically impossible if we had a stable dollar and that the wide fluctuations in credit which precede and follow a crisis would be practically out of the question. In short, crises would be nipped in the bud. If there be, ideally, a normal credit cycle it has never been shown and any hit or miss restriction would be just as apt to make the actual cycle less normal as to make it more normal.

But, even if it could be granted that there is some substance to this objection, it cannot be denied that the plan proposed would be a great improvement over the present system.

F. "The correction comes too late." It is objected

that the plan does not make any correction until an actual deviation has occurred, and so the remedy always lags behind the disease. This is true. The corrections do follow the deviations and so the correction can seldom be absolutely perfect. The practical point, however, as cannot be too often emphasized, is that it is approximately perfect and far nearer perfect than our present system. When steering an automobile, the chauffeur can only correct the deviation from its intended course *after* the deviation has occurred; yet, by making these corrections sufficiently frequent, he can keep his course so steady that the aberrations are scarcely perceptible. There is no reason why the monetary automobile cannot be driven very nearly straight.

It is also pointed out that, after the correction is applied, it may happen that prices will take an opposite turn, in which case the remedy actually aggravates, for an instant, the disease. But, taking the extremely fitful course of prices since 1900, and correcting it, according to the plan, every two months,[1] we find that this does not often happen and never for long. Even in the few remaining cases the deflections caused were very slight and were soon corrected immediately after the following adjustments.

G. Conclusion on "Alleged Defects." It will be seen that the objections which have been mentioned in this section are all on the ground of inadequacy. They are partly answered directly and all are answered by the argument that, however inadequate the proposal may be, our present standard is even more so.

Nothing practical is ever perfect and the imperfection of a plan does not condemn it if it is better than the plan which it replaces and if no plan still better is available.

If those who object to stabilization as proposed, because it is not perfect, are sincere, they should either supply a criterion of the imperfection they emphasize in the form of a better index number, or — if the plan

[1] As shown in Appendix I, § 9.

as proposed, though not perfect, is more nearly so than our present crude fixed-weight-of-gold standard, — they should support it heartily as a big step toward their own ideals. They should certainly not oppose it. In the terse phrase of modern slang, they should "put up or shut up."

Those who press the above six objections do not treat the question as a practical one but as purely academic. So far as the objectors have any other purpose than intellectual gymnastics their purpose is, subconsciously at least, obstructive rather than constructive. They seem to think that, by finding some shortcoming in the plan, they have justified the monetary system which we now have. They are, if I catch their spirit correctly, staunch defenders of the *status quo*, trumping up excuses for their temperamental hostility to change. This emotional attitude is discussed further in the following section.

3. The Obstacle of Conservatism

A. "*It has never been tried.*" Not as a whole; but every feature in it has been tried and tested — the index number, issue and redemption *ad libitum* of gold certificates, varying the redemption rate (as in the gold exchange standard), etc. It is simply a combination of these tried elements.

Perhaps the nearest existing approach to the plan as a whole is the "gold exchange standard" of India which has virtually converted the silver rupee into the gold standard somewhat as the proposed plan would virtually convert the gold standard into the composite standard.

The system here proposed would really be no more of an innovation in principle than was the Indian Gold Exchange System when introduced and developed between 1893 and 1900, while the evils it would correct are similar to, but vastly greater than, the evils for which the Indian system was devised. It was con-

servative England which, in order to get rid of the comparatively trifling inconvenience of a fluctuating rate of exchange with India, adopted this gold exchange system.

It is true that it is often better to "bear the ills we have than fly to those we know not of." But that bit of practical wisdom was never intended to blind us to the ills we do bear. These ills are not only far greater than the ordinary business man has imagined, but they are, I believe, destined in the future to become greater still. The reason for this prophecy is found in the ever-growing tendency to spread and multiply the ramifications of business contracts and understandings.

Sometimes this same objection takes the form of the innuendo: "The plan is altogether too simple not to have been adopted long ago." This is an inarticulate suggestion that, while the plan looks sound, we must beware of it; for surely our wise forefathers would long ago have discovered and applied anything so simple.

While this objection will seem to most people who think for themselves merely inane, it really constitutes a serious obstacle in the minds of many to whom all new ideas are suspect. They do not realize that their own attitude answers their own question. It is just because so many people like themselves distrust any change, that any change is so slow in coming.

The truth is, however, that neither the idea of stabilization, nor its application, is as new as it seems to most people, as is shown in Appendices V and VI. To my mind, considering how slowly new ideas usually spread, the wonder is that the progress toward acceptance of the idea has been so rapid. A generation ago index numbers, a vital element in the plan, were suspect; now they are almost universally used among intelligent business men. At the beginning of the Great War the correction of wages by means of an index number was a purely academic

idea and was ridiculed when first suggested seriously. To-day, as recorded in Appendix V, § 2, it is in use among a number of progressive industrial concerns and some official agencies.

The present stabilization plan has itself received the approval of several hundred prominent economists, educators, bankers, business men, lawyers, publicists, and officials, as is shown in Appendix IV, § 3.

B. "*The tide may turn.*" This suggestion is to let well enough alone because perhaps the wrongs of the present may be righted in the future by a reverse movement of the price level.

But, even if there should be such a reversal in store for us, two wrongs will not make a right. If prices are to fall, there is the same need of a stabilizer as though they were to rise. When prices were falling the same sort of cheer was offered us: "Wait, prices may rise!"

If this reasoning were correct we ought now to be thankful for the rising cost of living as a providential compensation for the falling prices of 1873–1896!

In order to prove the needlessness of standardization it must be shown that, in the future, we have reason to expect neither a rise nor a fall of prices but a stable price level — a condition of things which, so far as index numbers show us, has never yet existed, and which we feel safe in saying can never exist under our present monetary system.

C. "*It requires governmental interference.*" In these days of Governmental participation in economic problems this objection will not frighten many people, especially as the increase in Governmental functions over those already existing in the regulation of the value of money is infinitesimal. The Government already buys and sells gold, handles gold reserves of several kinds, and publishes an index number. The plan does little more, except to use the index number to set the price at which the Government buys and sells gold, in order to make the dollar a real standard of value instead of leaving its value

to chance. The Government also standardizes every important unit other than the dollar.

Furthermore, the Constitution of the United States in Section 8 expressly authorizes Congress "to coin money, *regulate the value thereof*, — and fix the standard of weights and measures."

While, when the Constitution was adopted, there could have been no thought of employing an index number for regulating the value of money any more than there was thought of using aeroplanes for carrying the mails, there was thought of stabilizing the purchasing power of money. In fact it was the instability of the Colonial and "Continental" paper money which was doubtless largely responsible for this clause and for the clause forbidding the individual states from coining or issuing money.

Therefore, not only should we not complain of the plan as giving new functions to the Government but we may complain that this ancient Constitutional function has not been performed as it should be to keep pace with modern methods of measuring the value of money.

We may go further and say that some Governments have not only been negatively guilty (of neglect to provide a stable yardstick of commerce) but positively guilty (of disturbing the monetary standard).

In our own Colonial, Revolutionary, and Civil War history our American Colonies and national Government depreciated their monetary standards. In the Great War every belligerent country did so and incidentally ruined the monetary standards of neutral countries. It should be added, however, that our own Government officials, from the President down, strove to avoid inflation and succeeded more nearly than did the officials of any other belligerent country — a fact in which we may take some pride.[1]

[1] As shown elsewhere American inflation was chiefly gold inflation before we entered the war, and our war inflation, such as occurred, was largely credit inflation of private persons borrowing of banks.

D. "*We could not interest other countries.*" The force of this objection has been greatly weakened by the war which has created world-wide interest in the problem of reconstructing monetary standards. No country can fail to be interested in all proposals toward that end. Furthermore, as has been shown in Appendix I, § 8, the adoption of stabilization in one country, especially if that country be the United States, would probably lead to its general adoption elsewhere.

E. "*The evils are unreal.*" So far as this objection is definite it has been answered in Chapter III which shows how real the evils are. One ingenious objector seriously suggests that the increase in gold may be due to " some as yet unknown social law which brings out this increased supply to meet or to stimulate the growing and changing needs of industry." It is difficult to answer this objection specifically, until the " as yet unknown social law " is discovered. As yet no one has been able to discover such a law. Surely the quest for gold is instigated by private gain and not by any desire to " meet or stimulate industrial needs " nor is the gain which the gold prospector receives or hopes for proportionate to the occult public service suggested. His success can surely have no quantitative relation to social needs. On the contrary, the discoveries of gold are fortuitous and conform to no " law " of social benefit, known or unknown. This objection is clearly born of the discredited tradition of *laissez faire* with its fallacious dogma that the public interest is always served by allowing rampant individualism. Under this idea we used to have unplanned streets without standard building lines, unsanitary and fire-trap tenements, wildcat banking, railway rate discrimination, unsound insurance, chaotic and fraudulent weights and measures, private coinage. Our present difficulties as to monetary standards are due precisely to this rampant individualism. We have intrusted the de-

termination of our yardstick of commerce to the luck of the gold prospector, to the inspirations of geniuses in metallurgy, to changes in banking systems, and to policies of Government finance.

F. Conclusion. Unless I am greatly mistaken the foregoing objections — that the plan has never been tried; that it is suspiciously simple; that it would mean Governmental interference; that it would be impossible to enlist the interest and coöperation of foreign countries (even granted that, after much labor and pains, we secured the requisite attention at home); that, rather than go to so much, possibly futile, trouble, it is far better to wait and see if the price situation will not right itself; that, after all, it is not so bad that it might not be worse; and that, anyway, we should rather "bear the ills we have than fly to those we know not of," — are at bottom not intellectual but emotional objections. They are, as the modern psychologist might put it, the "rationalized" excuses by which a preëxisting and temperamental hostility to anything new is defended.

The contrast between the great number and the small importance of all the objections offered is noteworthy. The large number of *misunderstandings* is what we always expect in the subject of money. But the large number of trumped up and trivial *objections* is what one might expect when a deeply rooted prejudice against a plan, as a "novelty," is combined with a lack of any real ammunition with which to attack it. The impression is forced on us that those who find so many objections to the new plan really have just one — that it is new.

This impression is further strengthened when it is observed how the various objections so often destroy each other. I have sometimes observed that when many different objections are offered to any proposition they are mutually inconsistent. If the plan were wrong, some glaring defect would presumably stand out in the foreground. But in this case every oppo-

nent has his own set of objections. In fact, as the objections show, they are often mutually contradictory. It is "too simple" and "too complicated"; "too slow" and "too sudden"; it is wrong "because it is fiat money" and "because it is not fiat money"; "it is simpler to make extraneous adjustments by index numbers" and "adjustments are unnecessary anyhow"; "gold is stable enough as it is" and "the adjustment would not be sufficiently accurate"; "it ties us up to the quantity theory" and "it is inconsistent with that theory"; "it would not permit cycles of credit" and "it would produce crises"; "it fails to be ideal" and "it is too idealistic"; "a national stabilization would isolate us too much" and "an international stabilization would entangle us too much"; "it would offer the government a dangerous chance to secure profit" and "it would cost the government unduly"; "it is too radical" and "it is mere temporizing with evils requiring the total abolition of money or capital"; "it would not permit needed inflation in war time" and "it would be totally destroyed by war," and so on.

After careful examination, I think every fair-minded man who has any serious wish to see the world in which he lives improved will agree that all the objections brought against the plan are, without exception, either fallacious or trivial.

Long experience with public propaganda has taught me how intensely stubborn is the temperamental resistance to change, and perhaps quite as much so among the intelligent as the ignorant, especially as the intelligent have the advantage of being more fertile in inventing objections.

Gold has become a sort of fetish of business men, almost worshiped with superstitious awe. Our fathers had told us that "nothing is so solid as gold." Only recently are people awakening to the fact that the fetish is erratic and tricky. The argument that we ought not to try to improve our monetary unit be-

cause of the purely mythical wisdom of those who unconsciously and accidentally handed it down to us is only an appeal to that curious and baneful prejudice against progress which every hoary tradition creates.

Our present standard, or lack of standard, is due to an historical accident and yet we go on traditionally using it simply because we got started in that groove, just as Boston still uses its crooked streets, never originally chosen with any reference to modern traffic; or just as we still use the original railway gauge, set by the horse carriage; or just as we left our National banking system virtually undisturbed for two generations after the passing of the Civil War conditions which gave it birth; or just as until May 19, 1828, we had no standard weight for determining the contents of coins; or just as until after 1832 we had no standard units of length, weight, or volume for the use of the customhouses.

All our customary units of length, weight, and volume were changed on April 5, 1893, by order of the Superintendent of Weights and Measures, under authority of an international agreement.[1] Acts to standardize measures of fruits and vegetables (the standard barrel and box) have been very recently passed by Congress. The National Food Administration has lately ordered that potatoes be sold by the pound (which is uniform in all the states) instead of by the bushel, which varies in weight. The long-pending bills to substitute the metric for the customary standards are still pending. No standard unit has any sacredness of age. We have changed and perfected them throughout our history, and we are still busy with changing and perfecting them. Physicists are now beginning to suggest that our standard of length should be the wave length of light at a certain

[1] *History of Standard Weights and Measures of the United States*, by L. A. Fischer. Bulletin of the Bureau of Standards, Vol. I, pp. 365–381.

point in the spectrum. Why, then, should we be afraid to perfect the dollar?

After any new plan has been tried and established these same conservatives turn about and become its most staunch supporters. This fact has been often illustrated in our monetary and banking system. Nothing short of the shock of Civil War was able to divert us from a state system of banking to a national one. Later the proposal for a Federal Reserve system was objected to most vigorously by bankers accustomed to the old system.

The resistance of conservatism is strong at first but has no resiliency. It is not like the resistance of a steel spring which, when pushed in one direction, will press back, but rather like the resistance of a mass of dough or putty which, though it resists impact strongly, yet when it is once moved stays inert and does not return. Under these circumstances, even if progress is made an inch at a time, it is worth while to try to make it.

And now this obstacle of conservatism — the one great obstacle — has been considerably lessened by the Great War, which has shaken the whole world out of old ruts. Even Great Britain is considering giving up her ancient monetary system — of pounds, shillings, and pence — in favor of a decimal coinage. Such a change would be felt by the people generally far more than would the proposal here made.

The prejudice and ignorance on this subject of monetary standards may be overcome either (1) slowly, by education beginning in the universities, and filtering gradually through the business world, as education in the index number has, or (2) more quickly, under the stimulus of some sudden and spectacular change in the purchasing power of monetary units such as the war is now affording or such as may come later from some great chemical discovery of how to extract gold from the low-grade clays of the South, the gravel of the Sacramento River or from sea water.

Just now the all-sufficient answer to those who fear

to take so "radical" a step should be that its so-called radicalism would save us from the real and dangerous radicalism with which the world is now threatened!

Some time, sooner or later, the idea will cease to be new. We shall get as used to it as we have to Daylight Saving or the League of Nations, which were new ideas a short time ago; for the index number, more and more utilized, will continue to remind us of our present instability. Already in spite of the distinguished character of some opponents or semi-opponents, the weight of real authority is on the side of the plan and not of its opponents.[1]

But the number of those who have as yet studied the plan or even considered its basic idea is very limited. Before any control of the price level can be actually undertaken, a larger public, especially in the business world, must learn to realize its necessity. So long as the mass of business men fail to realize that they are daily gambling in changes in the value of money, a fact of which they are blissfully unaware, no great demand for preventing those changes is likely to be felt; and the business man is the party whose interests are chiefly involved.

4. The Obstacle of Special Interests

A. Debtor and Creditor. One of the supposed obstacles to the stabilization of the dollar is the opposition of interest between debtor and creditor.

This supposed obstacle takes two forms, one the fear that there would be a struggle for advantage *at the outset* over the par to be adopted for the price level and the other the fear that the *subsequent* operation of the system would give rise to disputes between these two general classes.

The first supposition represents, it is true, what may prove a real difficulty. The settlement of this ques-

[1] See Appendix IV, § 3.

tion will be like the adjustments of the interests of various classes of stockholders and bondholders in a reorganization or like retiring the greenbacks and resuming specie payments. This is a Gordian knot which will have to be cut when the time comes in the manner which then seems best in view of all the circumstances.[1]

But it is quite possible that even the introduction of the system would scarcely call for more than passing notice. This has usually been true when monetary standards have been changed whether for good or ill. The average Filipino, or the average inhabitant of India, had no real conception of the changes which were wrought by the adoption of the "gold exchange standard," if indeed he ever heard of it. The average American in 1873 paid little attention to the demonetization of silver, or in 1879 to "resumption," once that it had been decided on in 1875. So also to-day the average American is still unaware of the recent changes in our banking and currency laws, even of the extensive substitution of Federal Reserve notes for gold certificates.

But, — to turn to the second form of the supposed obstacle, — after the start-off had once been decided upon, the subsequent operation of the system would *not* arouse contests. On the contrary, it would avoid them. Experience proves that the creditor and debtor classes do not get aroused when the price level is fairly stable but only after the most drastic and long continued *changes*.

Thus it took over two decades of falling prices after 1873 to arouse the debtor class to a realization of its losses, and then only after much agitation.

Likewise to-day it is hard to make the average man realize that the depreciation of the dollar has affected the interests of creditor and debtor. Though economists may clearly show by index numbers that the bondholder has not really been getting any interest, *i.e.* has

[1] For my suggestions as to how to solve this part of the problem, see Appendix I, § 4.

been losing the equivalent of more than 100% of his income, yet the ordinary man who believes "a dollar is a dollar" gives scant attention to such a proposition and, if he finds any fault at all with rising prices, vents his wrath not upon inanimate gold or credit but upon the luckless "profiteers," the retailers, the landlords, the trusts, the middlemen, the tariff, or the trade unions.

So also the savings bank depositor, who during the last two decades has been defrauded of all his interest through the depreciation of the dollar, does not yet understand either this fact or its cause.

The reason for such astounding indifference to the colossal interests involved is that the loss is indirect and, until recent years, has not even been measured.

It has always been found that there is less complaint under indirect than under direct taxation. The ordinary tax payer feels, and complains of, direct taxation because he can see and measure it. But the economist cannot rouse the tax payer from his lethargy enough to make him cry out against the outrages of indirect taxation. All the cartoons and figures designed to show, for instance, how the tariff taxes the consumer, make comparatively little impression; and it has required several generations to bring the American consumer to the point of even mildly protesting against a high tariff.[1]

If, then, there is so conspicuous an absence of complaint over huge losses, because hidden, it is not to be expected that there will be complaint over the correction of these losses, especially as these corrections also lie hidden from view, or over the small fluctuations left uncorrected. To be specific: if, as experience proves, the price level has to change more than twenty-five per cent before eliciting protests we need not fear quarrels over one or two per cent.

In short, if the monetary system proposed were once

[1] Even this protest was largely based on the recent general rise in the cost of living mistakenly attributed to the tariff as the chief cause.

adopted, there would be very little attention paid to it. The business world would be as unconscious of the operation of stabilization as a healthy man is of his stomach or liver. Only the changes in the price of gold would register the operation of the system and few persons besides the gold exporter, importer, jeweler, and miner would ever notice what the price of gold was. The ordinary man would, just as to-day, buy and sell with yellowbacks or other money or checks, blissfully unaware that these have any relation to gold.

The case would be quite different if the proposal were to adopt the " tabular standard " by correcting money payments through the addition to, or subtraction from, a debt of a certain number of dollars. Under these circumstances the extra dollars paid or withheld would stand out definitely like direct taxes as contrasted with indirect taxes. There might then be some disputes over the correctness of these extraneous adjustments of contracts. But, even in such cases, disputes would probably be rare. At any rate there seems no evidence of extensive disputes where the tabular standard has actually been used as it has, for instance, in Scotch Fiars prices, in the Massachusetts law of 1780 described in Appendix V, § 1, and in the recent adjustments of wages by various official bodies and private firms in the United States and elsewhere. This being the case, surely when the tabular standard is, as it were, incorporated in the actual money of the country, the ordinary debtor and creditor would be even less aware of how his interests had been safeguarded than he is now aware of how his interests are jeopardized under our present gold standard. He would simply note, — after a decade or two, — that prices had kept stable.

It is still more difficult to imagine a quarrel between debtor and creditor over technical details, over whether iodine ought or ought not to be included in the index number, or whether wheat ought to be given a " weight " of three per cent or four per cent of the

total. As we have seen, the influence on the final index number of any one commodity or of any other single detail of the system is almost infinitesimal.

Sometimes the objection takes the shape not of fear that debtors and creditors would quarrel over the plan but that they would find ways to corrupt or pervert its administration.

But no room for abuse is open either in the Bureau of the Mint which would regulate the weight of the dollar, or in the Computing Bureau, which would calculate the index number. In either case the functions involved would be clerical; the acts required, specific. Departures from a strict compliance with the law would be instantly recognized, and would bring upon the culprit wrath and punishment proportionate to the gravity of the offense.

Thus, the Bureau of the Mint, which would regulate the weight of the dollar, would do so merely by buying and selling gold at specific prices fixed for it by the Computing Bureau; and it would have to buy or sell at the pleasure of the public. It would have no more choice than does a broker who is ordered to buy or sell at specified prices.

In the Computing Bureau, the work of which is based on published market prices and is necessarily done in the light of day, the danger of abuse or fraud is also negligible. There is some experience to guide us here. The gold exchange system which has more of a discretionary element in it than the proposed system has not been found to be open to abuses but has been faithfully executed.

If manipulation of prices is to be expected at all we should expect to find it most in the Scotch Fiars prices already referred to. In this case money rents are determined by prices of wheat ("corn"). Complaints of unfairness have undoubtedly been made, but to leave money rent uncorrected was considered much more unfair. I have examined carefully the records of the only complaint of which I have found mention in the Yale

University Library.[1] This complaint was simply that the jury was not wholly disinterested and did not take sufficient testimony. That the system itself was not in dispute is shown by the following interesting passage:

"It is evident, that Grain, sooner or later, and, probably, within a short period, will become the only standard, by which land-rents will be paid throughout the kingdom. Money, from its fluctuating character for the last thirty years, has proved a medium mutually unfair, and not less dissatisfactory, to both landlords and tenants. Taught by past experience, no landlord is now willing, without the assurance of an adequate rent, to alienate his property for any considerable length of time; and without lease of acre endurance, no tenant is disposed to embark his capital and skill in the adventure of cultivation. In Grain, as a measure of value, a medium has, at length, been found, which, while it preserves the just rights of the one, secures a return for the honest industry of the other."

Were the system very unsatisfactory it would scarcely have been continued through over two centuries.

It should be further emphasized that, whatever slight danger now exists of abuse of Scotch Fiars prices, would be almost infinitely reduced by the plan here proposed; because, in that plan, we are concerned with great public markets in big cities, with highly standardized grading of goods and standard price quotations instead of with small crude country markets, and because we have to deal with a large number of commodities instead of with only one. It is inconceivable that any sinister influence, in order to help the debtor or creditor, could manipulate a sufficient number of commodities to affect appreciably the index number. Even if some one could "corner" a market and double the price of one commodity this would not raise the general price level one per cent. To accomplish even such a feat is out of the question, while to

[1] In the "Report of a Committee of The Commissioners of Supply for Lanarkshire; Appointed to enquire into the procedure by which the Fiars of Grain for that county were struck, for the year 1816; together with some investigation of its principles and some suggestions for its improvement," Edinburgh, 1817. Recorded in Tract 579, Yale University Library.

corner or control a hundred commodities is unthinkable. Moreover, supposing such control of commodities possible, we are now far more exposed to the danger of a corner in gold than we could be to a corner in hundreds of other commodities!

The same argument applies to any supposed danger of misquoting of prices. Any *gross* misquotation such as doubling the true figure would be, of course, out of the question, while anything less would be of no use to the would-be rascal. And if there should be an effort to stretch some price quotations as far as this could be done without detection (which would be only a single per cent or two), the result would not affect the average more than a small fraction of one per cent, which likewise would not be enough to be worth while.

Furthermore, experience shows that the manipulation of weights and measures and moneys has not occurred where they were entrusted to official technical scientific bureaus but only where either private or political control was permitted.

One may still see in the museum of the old Hanseatic League at Bergen, Norway, two sets of weights. The heavier was used for buying and the lighter for selling! The modern official sealer of weights and measures has reduced such fraud to a minimum.

Similarly under the old private right of coinage there was confusion and fraud. But no modern official mint has been accused of making light-weight or counterfeit coins.

We conclude, then, that the fear of contests or manipulations arising from the operation of a stabilized dollar is quite groundless. We may go further and say that, on the contrary, such a dollar would remove the danger of contests and manipulations, which danger is not only now present, but is clearly due to our *unstabilized* dollar, ever affording grievances to the debtor against the creditor, or *vice versa*. In 1896 the "free silver" campaign derived its strongest support from the debtor class, which sought to "get even" for the losses

and increase of debt-burden due to falling prices, *i.e.* to the rising purchasing power of the dollar.

The recent great rise of prices, *i.e.* fall in the purchasing power of the dollar, now threatens a similar conflict of interests. The millions of bondholders, creditors to the tune of hundreds of billions of dollars mostly growing out of the war, will have an interest in stopping inflation and creating contraction, while the debtor classes, including the governments and the taxpayers, will have an opposite interest.

The conflict will be mitigated, of course, by the fact that the bondholder and the taxpayer are, to a large extent, one and the same person. But this may not prevent the conflict becoming a bitter one. In fact already at least one bitter book has appeared in England against contraction, alleging that a conspiracy is now being plotted by the creditor class to destroy the war currency and produce contraction.

The abuse most common in currency history has been inflation in the interest of the debtor class, and especially of the Government exchequer. The proposed scheme would not only be free of this danger but, when once in operation, would be a strong safeguard against the whole idea of inflationistic legislation. There is always with us a latent danger of inflation; but if a stable dollar should be adopted, that danger would be greatly diminished.

The plan would involve a double education. For, first, it could not be adopted until it was realized that its object was to stabilize prices and maintain the constancy of the purchasing power of the dollar. In the second place, it would, therefore, always be a standing object-lesson as to the principle of stability. Its adoption, or even its discussion, would tend to increase the understanding of, and desire for, a stable standard and so fend off unsound schemes. The fact of the buying and selling of gold by the Government at variable rates would itself be informative as to the object in view; and the constant clinging to par of the published index

number of prices would be eloquent testimony of how the system worked.

Under our present system inflation can be suggested without the question of changing the purchasing power of the dollar being so clearly thrust forward, since our present system does not even pretend to, or afford any mechanism for, such stability. In fact, inflation almost invariably comes by subterfuge and indirection. If a stabilization system were adopted any attempt to break it down would be an evident and deliberate departure from the principle of uniformity in the purchasing power of the dollar.

We see then that as long as we leave monetary units crude, unscientific, unstandardized, we run far more risk of political manipulation than we shall when we intrust them, like other units, to standardization.

We should set about our search for a just settlement of this question before it is allowed to become a partisan or political question. To stabilize the dollar and intrust it to a scientific bureau would put it as much beyond the reach of manipulation as are the astronomical clocks of the Naval Observatory or the weights and measures of the Bureau of Standards.

B. Gold Producers. There is one special commercial interest which might, until it had thought the matter through, feel inclined to oppose the proposal, — the gold mining interest. The very crude fallacy that the stabilization plan would " throw the losses " now suffered generally on to the Government has already been answered (see Appendix II, § 1, *I*). The same crude fallacy has been adapted to mean that " the loss would be thrown " on to the gold miner.

Gold producers might, under some such notion, mistakenly prefer the present fixed price of gold to a variable price. They might on first thought regard a fall in the price of gold as a calamity.

Any who would take this view would overlook the fact that this lower price would be in terms of a heavier dollar. It really makes no difference whether the gold

miner sells an ounce of gold for twenty dollars, of a twentieth of an ounce each, or for forty dollars, of a fortieth of an ounce each. In fact the former is approximately the case in the United States and the latter in Mexico. If the view were correct that a lower price of gold in terms of a heavier dollar were really injurious to the gold miner, why is it, as I have said before, that gold miners do not now sell all of their gold in Mexico instead of in the United States, so as to receive a price twice as high?

Again, it does not matter whether the gold miner receives a high mint price and has to pay dearly for his machinery, labor, supplies, and other costs of operation, or receives a low mint price and can buy his machinery, labor, and supplies more cheaply.

Still again, it does not matter whether the miner makes large money profits while the cost of living is high or small money profits while the cost of living is lower. In fact the former is true in Mexico and the latter in the United States.

In the long run, then, there is no advantage or disadvantage to gold miners from changing the price of gold. This is fundamentally because the price of gold is in terms of gold itself. It ought to be clear that the interests of the gold miner are not concerned with the price of gold in terms of itself! Their interests lie in exchanging their gold for real wealth.

This is well illustrated by recent history. Despite the "fixed price of gold," the war has, none the less, hurt the gold producer by inflating the world's currencies with credit substitutes for gold and so lowering the value of gold, in terms of other things.

Had the dollar been stabilized before the war and been kept stabilized during the war the gold miners would not have been hurt by the war. They have been hurt by inflation — the flooding of the currency with substitutes for their product. Consequently they have asked for relief. They were soon made to see the futility of any relief from raising the price of gold in terms of

gold. They should have no difficulty, therefore, in seeing also that lowering the price of gold in terms of gold would not harm them.

On the other hand, while the gold miner would feel no special effect from the stabilization plan he would enjoy the same general advantages which it would bring to society.

Furthermore, resistance by the gold miners to accepting a variability in the price of their product which every other industry has to accept, when the object of the plan is to relieve all industries, their own included, of the variable unit of value, might be shortsighted; for the world will not forever tolerate the intolerable evils of an unstable dollar, and if the gold standard cannot be rectified it will some day be abandoned altogether.

It is clear, therefore, from several points of view, that only shortsighted gold producers would oppose the plan. In this connection it may be said that several prominent gold mine owners have approved of the plan.

C. Devotees of Panaceas. Another special class of objectors consists of reformers who have panaceas and who, therefore, consciously or unconsciously, object to the intrusion of any rival remedy. The socialist, the single taxer, and the devotees of various other reforms, when they object to the plan, usually do so merely because they think that their own pet remedy is adequate to solve the whole problem of social injustice. Anything else, they say, fails to "go to the root of the matter." They seize the opportunity, afforded by the general desire for a remedy, to make capital for their own proposals, however remote from the problem in hand. Socialists especially systematically pooh-pooh any method other than socialism as "mere temporizing."

Such objections answer themselves. We might as well object to standardizing the yard or the pound, on the ground that such a measure would not put a stop

to social discontent while socialism or the single tax would.

The plan to stabilize the dollar is, needless to say, not put forward as a panacea or as a substitute for general schemes of social reform. It has simply one object, — to supply a dependable unit of value. That object is not in conflict with any other sincere plan for social betterment. Only those who wish to retain existing evils, confusion, discontent, and suspicion in order to make use of them to further their own pet plans can oppose stabilizing the dollar.

In this connection I may mention an incident of a few years ago. Following an address by me on stabilizing the dollar, a prominent radical socialist addressed the same audience and attributed the high cost of living to " capitalism." Afterwards he frankly told me, privately, that he realized the truth of my contentions but that, as a socialist, he wanted to " make hay while the sun shines " and that the high cost of living was a good lever by which to make the people hate the existing social order!

D. Speculators. This is the only class which would be really deprived of great opportunities by stabilizing the dollar. Speculation feeds on uncertainty. It did so after the Civil War and is doing so after the Great War. The greatest beneficiaries and the greatest victims of great price movements are speculators. As long as uncertainty exists speculation will, and should, exist and the wise speculator in one way and another relieves the rest of society of some of its burden of uncertainty, while charging for this service a very high price. But every reduction of the hazards in business on which speculation feeds marks a step forward in civilization. Stabilizing the dollar would mark such a step forward, though of course it would by no means take away all opportunities to make money by taking chances.

APPENDIX III

ALTERNATIVE PLANS

1. A Sound Alternative

A. Introduction. This book was written not so much in behalf of the specific plan described, which is regarded as the most practicable, as to show that the problem of stabilizing the dollar and the price level is soluble.

Many readers would like to know what alternative plans have been suggested. Of these the only one which seems worthy of careful consideration is that suggested, in a conversation with me, by Professor Gilbert N. Lewis, Professor of Chemistry of the University of California. He asked if it would not be possible to have paper certificates redeemable in the actual goods-dollars instead of in their gold equivalent.

It would, of course, be impracticable literally to maintain the "free coinage," *i.e.* deposit, of goods-dollars for certificates on the one hand and the free redemption of these certificates in goods-dollars on the other; because these goods-dollars would be too heavy, bulky, and perishable to use as reserve, as well as for other reasons.

Nevertheless it would be entirely practicable to secure the desired regulation of the quantity and value of paper certificates by a simple device for *indirect* issue and redemption.

Such a system would first be launched by the conversion of our present gold certificates into certificates entitling the bearer to redemption in goods in accordance with the plan described below. All other

money, bank notes, etc., would of course be redeemable in these goods-dollar certificates.

B. Redemption Warrants. The essence of redemption of these goods-dollar certificates is that their holder would be able, with certainty and without much trouble, expense, or delay, to exchange them for the commodities specified and in the quantities specified. This object could be substantially attained, as Professor Lewis suggested to me, by using the device of *warrants* for commodities as intermediate between money and commodities. This would break up redemption into two stages. The first stage would be when the holder of certificates would present them (in convenient lots of, say, one thousand dollars) at the Treasury and receive, in exchange, a set of separate specific warrants or orders, each warrant being for a specified amount of a particular one out of the collection of commodities represented. Thus one warrant might be for a thousand board feet of lumber, another for half a ton of sugar, etc., the entire collection constituting a thousand goods-dollars.

The second stage would be when these various warrants would be presented at separate offices for redemption in their respective commodities.

It is not necessary to discuss, at length, the exact organization of such offices. My object here is simply to show that, if we were willing to make the innovation of establishing such redemption offices, the plan would be economically feasible. Various methods could be used. Thus the Government could set up, in Washington, New York, or elsewhere, or in several different places, a great Government department store or agency which, whatever else it did, would receive these warrants and either hand over the goods from stock or agree, as immediately as practicable, to secure and deliver the goods called for. Another method would be for the Government to license a single private agency to conduct the business of redeeming the warrants for due consideration. A third method would

be to license a number of such agencies, say one for each commodity. In this case, the most natural agencies would be existing large dealers in the various commodities concerned, a lumber merchant for redeeming lumber warrants, a wheat dealer for the wheat warrants, a coal dealer for coal, etc.

Nor do we need to discuss, in detail, the method by which the Government would reimburse any agencies it employed. It could pay lump sum retainers or the actual costs involved. The method simplest to understand would be for the coal dealer, for instance, after honoring a warrant for coal, to present a bill for said coal, at current prices, or at contract prices, to the Government, accompanying the bill with the warrant as evidence of the validity of the bill. This arrangement would be like that made for tourists by " Cook's " and other companies which sell warrants for meals and lodgings which are honored by hotels and later sent back to Cook's with bill for services rendered.

C. Unrestricted Redemption via Warrants. Whatever may be the business arrangements best suited for providing a working mechanism by which the Government would redeem certificates in the particular commodities which the certificates represent, our present interest lies in the working of that mechanism to stabilize the dollar.

The essence of the operations described is that certificate dollars are freely redeemable in goods-dollars (via warrants).

Such redemption would serve to correct any incipient depreciation of the certificate-dollar relative to the goods-dollar.

For, if the index number should rise much above par, *i.e.* if, in the open markets, the collection of goods constituting one thousand goods-dollars cost much more than a thousand dollars of certificates, recourse would be had to redemption. Speculators or warrant-brokers would arise who would find it profitable to gather together, say, $100,000 in certificates, redeem them in

warrants, redeem those warrants in commodities, and sell these commodities in the open market for, say, $110,000 of certificates, thus making a profit of $10,000 (less expenses) on the series of transactions. As long as the index number were enough above par to make such operations pay, redemption would go on. The certificates so redeemed would be canceled, thus contracting the currency and reducing the index number toward par.

In short, if such redemption of money into commodities existed some people would refuse to patronize the markets at very high prices and, instead, patronize the Government which guaranteed to redeem certificates in goods.

D. Unrestricted Deposit of Goods-Dollars. So far we have considered only one of the two great regulators of the value of money; namely, unrestricted redemption of certificates in goods, constituting the outflow of money from circulation. The other is the "free coinage" or unrestricted deposit of goods, or some equivalent system of issuing certificates for goods, constituting the inflow of money into circulation. While, as already said, it would be impracticable to have literal composite goods-dollars brought to the mint to be exchanged for certificates exactly in the manner that gold is now exchanged, yet essentially the same result could be secured by the intermediation of warrants. The warrants would, in this case, pass from merchants to the Government instead of from the Government to merchants as in the operation of redemption.

To fix our ideas, we may suppose a licensed warrant-broker executing the following operations: First, with money (certificates) he buys up from miscellaneous sources, wherever he can get the lowest prices, the bill of miscellaneous goods constituting, say, $100,000 in goods-dollars. Some or all of these may be left in the custody of the respective dealers from whom he buys; but their ownership passes to him.

Secondly, he draws a sworn warrant for each of these lots of goods and presents at the Treasury the total assortment of such warrants, *i.e.* in the proportions required to constitute goods-dollars. He receives, in exchange, $100,000 of certificate-dollars. He has then virtually coined his goods into money or, at any rate, deposited 100,000 goods-dollars and received 100,000 certificate-dollars.

After the operation the Government then owns the miscellaneous bill of goods, or, let us rather say, a credit or right against the warrant-brokers to furnish 100,000 goods-dollars on demand or short notice (a right which would be enforced whenever the goods were needed for redemption of certificates).

The above process, simulating free coinage, would prevent the goods-dollar falling much below the certificate-dollar; for, as long as it is low enough to make such "coinage" of goods into money profitable, such coinage or deposit would continue. Thus if the merchant described above found that, at current prices, he could buy up the commodities constituting 100,000 goods-dollars for only $90,000 he would, after depositing them for $100,000, be making a profit of $10,000 (less expenses). The volume of money would then expand, prices would rise, and the profit on such operations would cease.

In short, the "free coinage" of goods-dollars would keep prices up because holders of goods, rather than sell at very low prices in the open market, would avail themselves of the Government's standing offer to buy 1000 goods-dollars for 1000 certificate-dollars.

E. Summary. These two processes, equivalent to our present free or unrestricted coinage and redemption, would keep prices from falling much below, or rising much above, par. They would thus put limits on the possible fluctuations of the index number, redemption taking place when the upper limit was reached and "coinage" or deposit taking place when the lower limit was reached. As long as the price level

lay between these limits, there would be neither redemption nor "coinage."

It is scarcely worth while, as I am not advocating this plan, to go into much further detail. But it may be pointed out that, if desired, the limits to the index number may be narrowed if the Government would bear the expense in clerk hire, rent, interest, etc., involved in the broker's work of conducting his operations (just as, to-day, for an analogous reason the Government bears the expense of the Mint).

We have, so far, assumed that money, *i.e.* certificates, would come into being, as to-day, only by the act of "coinage," *i.e.* by the deposit of (warrants for) commodities and never by mere arbitrary issue to defray Government expenses, as in the case of "fiat money"; and, likewise, that money would pass out of existence only by the act of redemption, *i.e.* by the issue of warrants for commodities. The monetary system would then be strictly analogous to our present system, gold being replaced by a composite of commodities. It would not be a "fiat money" system.

2. The Same System Modified by the Omission of "Free Coinage"

We could, although with danger to the system, omit the "free coinage" feature, provided we permitted the issue of certificates for Government expenses and relied on such issue ceasing as soon as the resulting tendency toward redundancy brought about a demand for redemption. If, under such an arrangement, the Government should persist in overissuing paper certificates with one hand while redeeming them with the other, it would be losing through redemption what it would gain by the issue, in an "endless chain."

As to the opposite possibility, that of contraction, there would, if free coinage were not employed, be no safeguard. Nor would any be needed; for while, theoretically, the issue of certificates might be in-

sufficient to keep the price level up to par, in actual practice the Treasury would be sure, in self-interest, to issue all it could without producing redundancy and loss from redemption.

The system described in this section would be exactly analogous to a system into which our present gold standard system would be transformed if we were to drop the free coinage, or deposit of gold (and permit, instead, the issue of certificates in payment of Government expenses limited merely by the obligation to redeem in gold).

3. The Same System Modified by the Omission of Redemption

To make our statement complete and symmetrical it should be added that we could imagine the opposite modification of the system, the " free coinage " feature being retained but the redemption feature omitted, the Treasury being allowed to issue certificates not only in exchange for (warrants for) commodities but also, at discretion, for expenses. But such a system would work only *theoretically*, *i.e.* on the assumption that the Treasury should systematically keep *down* its issues. It would be effectually stopped from undue contraction (were there any danger of that !) by the loss which would be imposed on it by warrant-brokers in demanding " coinage " of commodities. But, practically, the temptation would always be to *expand* and, as there would be no clear check on expansion, such a system would be almost sure to break down. It would be, in effect, what is called a " fiat money " system and little, if any, better than a pure " fiat money " system in which there is neither redemption nor coinage but only discretionary issue. Such a system is fundamentally unsound because there is nothing to check inflation. It would be analogous to a system into which our present gold standard system could be transformed by omitting redemption. Many writers (*e.g.* Parsons,

Winn, and even Alfred Russel Wallace) have, it is true, seriously proposed such a discretionary system. But both experience and theory condemn it. No system yet proposed is really sound which omits the feature of redemption (nor is any system entirely sound if it omits the feature of deposit). Where paper money is vaguely assumed to "represent" commodities without any active redemption to make it good such representation is a mockery. Thus the famous, or infamous, "assignats" of the French Revolution were supposedly "based" on land but were in no way restricted thereby.

4. A Money Based on Labor

Others have suggested a plan somewhat analogous to the foregoing, the standard being a day's work of common labor.

We have as usual to consider the two fundamental operations of issue and redemption.

The plan provides for the virtual free "coinage" of such day's work into labor certificates by having the Government offer work on public roads or other public works issuing a fixed sum of money, *e.g.* three dollars for such day's work of common labor.

No provision for redemption is made, however. The certificates are receivable in taxes, but this does not make them convertible into day's work. The theory is that, should there be, at any time, an excess of certificates in circulation, their issue would be checked as workmen would refuse to work for the Government at the fixed price when, as a consequence of inflation, they could get more from private employers.

This system is in essence, therefore, the one-sided system described in § 3. It is as if we had free coinage or unrestricted deposit of gold for our present gold certificates without provision for redemption (although the certificates would, of course, be legal tender and receivable for taxes).

The faults of such a system are: (1) Lack of redemption as a decisive check on inflation. (2) The consequent temptation to inflate by issuing the certificates for general expenses. (3) The inconvenience and helplessness of the Government as to the amount of the public work it would thus give out. Sometimes workers would apply in large numbers and the Government would have to give them work, even if it did not really need them. At other times workers would apply in small numbers or not at all, because attracted, for the time, by private employers and the Government could not secure their services as it could not, without spoiling the currency, bid above its fixed price. Public works would thus be entirely subordinated to the maintenance of the currency. (4) The lack of definiteness of "a day's work of common labor" and the lack of its fluidity.

The question of the relative virtues of the labor standard and the commodity standard is discussed in my *Purchasing Power of Money*, Chapter X, § 4.

5. Governmental Control of Gold Production

Mr. B. M. Anderson, Jr., suggests international Governmental control of gold mining, or a variable tax on gold mining. The former has already been mentioned.[1] The latter would be unjust to gold miners and, for that reason alone, impracticable. The plan proposed in this book must not be confused with such a plan. It is not a plan to control the output of gold. As shown in Appendix II, § 4, the gold miner would not be adversely affected but would share in the general advantage and prosperity which the plan would bring.

6. The Tabular Standard

As is shown under "anticipations" in Appendix VI, § 3, *D*, the idea of a tabular standard is a very old one,

[1] See Appendix I, § 1, *L*.

and, as shown under "precedents," in Appendix V, it has in a number of instances, notably during the Great War, been actually employed.

The proposal is, not to change the monetary standard itself but to correct its injustices in any contract by supplementary payments from the debtor to the creditor or *vice versa* according to an index number. If a debt for $1000 were contracted in 1900 and paid in 1920 and if the index number in 1920 were 250, on the basis of 100 for 1900 the debtor who had engaged to pay by the tabular standard would, in 1920, owe 250% × $1000, or $2500; that is, he would supplement the $1000 which his debt calls for by $1500 under the tabular standard agreement.

This plan would, apparently, accomplish everything which the plan proposed in this book would accomplish and without disturbing our monetary system in the least.

Practically, however, it would never accomplish more than a small fraction of what a true stabilization of the dollar would accomplish and, if widely used, would really cause considerable disturbance, of one sort and another.

As a makeshift in an emergency this plan is worth while, especially for correcting wages, but its inconveniences stand in the way of a wide adoption, especially in ordinary times. In the absence of a real standardization I favor[1] it most heartily and hope that it may serve as a stepping stone toward something better.

The two chief objections are (1) the inconvenience of calculating (which would be like that which would be caused if we were to use as our yardstick of length the height of a barometer and had to employ a new correction factor each day for selling cloth) and (2) the trouble which would come from the fact that the tabular standard would only be partially employed. Thus

[1] See Irving Fisher, "Adjusting Wages to the Cost of Living," *Monthly Labor Review*, November, 1918.

if a merchant corrects the items only on one side of his ledger by an index number, his profits would be destabilized rather than stabilized.[1]

[1] See Irving Fisher, *The Purchasing Power of Money*, New York (Macmillan), p. 336, and "Rejoinder by Professor Fisher," *American Economic Review*, June, 1919, pp. 256–262.

APPENDIX IV

PUBLIC INTEREST

1. Either an Upheaval or a Collapse of Prices Weakens Confidence in Money

In Chapter III certain historical effects of changes in the level of prices were noted. These were selected to illustrate the evils of an unstable dollar.

We are here interested in certain other historical effects of price movements, namely those on popular ideas of money.

Any noticeable change in the price level is practically sure to produce a crop of complaints and of proposals to remedy the disturbance. At first these popular complaints and proposals ignore money, for the reason that, as explained in Chapter II, the popular mind is full of fallacies about money. To look to the dollar as a cause of great price movements in food, steel, and cotton, is literally the last thing to occur to the ordinary man. When those more versed in monetary theory suggest that the dollar may have any such rôle to play, the idea is at first greeted with derision. But if the price movement is rapid and long continued, the idea of a monetary cause behind it gradually begins to enter the minds of men least impervious to new ideas.

The chief, though not the only, examples of such violent price convulsions are found during and following great wars.

During a war, if the fiscal needs are great, inflation is apt to take place. After inflation has wrought its harm, a healthy distaste for inflation sets in and leaves its impress on politics, legislation, and the national tradition. Each war supplies its particular object lesson

and adds a little to the education of the people on the money problem, although, unfortunately, the lesson is largely forgotten by the time it is next needed and the old costly way of learning to lock the door only after the horse is stolen, goes on.

It is surprising how often a forgetful public will repeat its old mistakes. The exigencies of war finance again bring a tremendous pressure toward inflation which again brushes aside the feeble scruples left from a dimly remembered past.

And sometimes these faint traditions are made to count for much less by changing the *form* of inflation. The public will often condone the new and disguised form of inflation even when they would turn their backs on the old forms. For instance, many business men, while having a healthy dread of *irredeemable paper money*, yet did not object to the laws of 1878 and 1890 providing for inflating our currency with silver, and they nearly yielded to the "free silver" sirens in 1896. In recent years we have had much gold inflation. Yet even to-day, only a small minority of people will admit the possibility that there could be any such inflation.

Credit inflation is even more subtle and enticing. Many will remember the fallacies current when the United States entered the war. One orator told his audience they need make no effort at all in order to subscribe to Liberty Loans. "All you need to do," he said, "is to go to a bank and borrow the money which you are to lend to the Government, agreeing to let the bank have the bond you buy with that money as collateral security. It's just perpetual motion!"

Even to-day there are those who will deny that there has been inflation of any kind during the Great War. Such denial is always found as a mental "defense" whenever there has been inflation.

But sooner or later the truth is admitted and the temper of the people and their statesmen becomes one of "good resolutions."

The abuses of paper money inflation have usually called forth some attempts to safeguard against it. It was in order to escape from such evils in Colonial days that, in Massachusetts, the commodity bonds described in Appendix V, § 2, below, were devised. These Colonial abuses and those of the Continental paper currency of the American Revolution led also to the provision in our Constitution forbidding states to emit " Bills of Credit."

After the English experience with depreciated money in the Napoleonic wars came, as natural consequences, the great investigations on prices by Tooke and Newmarch and the classic Bullion Report of Parliament.

After the flood of gold in the '50s we note a great interest in the instability of money. It was soon after this that Jevons devised the index number as a measure of the general level of prices and wrote on " a serious fall in the value of gold."

After our experience with the greenbacks of the Civil War, the subject of money and prices became one of intense interest. There were soon developed two parties, the inflation and the contraction parties, and acts of Congress alternately favored first one and then the other of the opposing policies. Our " Legal Tender " controversies, our Greenback party and our Resumption Act, were direct outgrowths of the monetary instability of the Civil War.

An increasing and worldwide interest in money and prices was displayed through the long years of falling prices, experienced throughout the world, between 1873 and 1896.

During that period we find increasing complaints, many official inquiries and reports, and numerous proposed remedies, including various forms of bimetallism and several anticipations of the very stabilization plan of this book (see Bibliography, Appendix VI). International conferences assembled to discuss the gold and bimetallic questions.

To be more definite, there were the Bland-Allison

Act and the Sherman Act for the purchase of silver, and there was the " 16 to 1 " campaign of 1896 for the restoration of the free coinage of silver as a means of restoring the old price level.

The same interest was displayed when the upward price movement between 1896 and the Great War was going on. There was then worldwide discussion of the " High Cost of Living " and of gold inflation as its possible cause. The newspapers were full of cartoons and editorials; and the magazines, of elaborate articles. Numerous books appeared; much legislation was proposed and some enacted; many investigations were made, both official and unofficial; ponderous reports were issued in many countries and proposals were made for an international conference on the subject. Bread and meat riots had occurred in many cities throughout the world, from Berlin to Tokio. Some people insisted that there was gold depreciation. Mr. Edison predicted that some day the southern clays would give up their gold and cause further loss in the purchasing power of the dollar. Mr. Carnegie, in making a gift of ten millions to the Carnegie Institution of Washington, stipulated that a certain part of the income should be set aside as a sinking fund against " the diminishing purchasing power of money."

This interest in the High Cost of Living reached its highest point in 1914, but was then, for a time, overshadowed by the war.

Afterward it became apparent that the war itself had put the " High Cost of Living " still higher. The result was to revive interest in the subject. We spoke of food famines and of a supposed world scarcity of goods. We had begun even to talk of the inflation brought about by issues of paper money, by expanding war loans, and by inflowing gold. Sweden practically demonetized gold. Price fixing on a vast scale was tried in belligerent countries.

Soon after the Armistice, the interest in the subject took a new start. The business world began eagerly

to discuss the question whether the war level of prices was to continue. Mr. Redfield, Secretary of Commerce, tried in vain to stabilize prices by price fixing. A large number of the members of the Massachusetts legislature petitioned President Wilson to come home from Paris, stating that the problem of the High Cost of Living here needed him more than the peace problems at Paris.

The foregoing are but a few examples of the world's bitter experiences with price movements in the past,—experiences, we may add with confidence, often to be repeated in the future, unless mankind shall find a way to stabilize money units.

It is safe to make the generalization that when prices go up or down fast and far, the public invariably shows a lively curiosity as to the reasons why and an unwonted willingness to consider monetary causes as at least a partial explanation.

Unfortunately, it is also usually true that, only a few years after the price movement giving rise to this dim idea has subsided or reversed itself, the idea is forgotten by most people and the public sink back into the fogs of the money illusion described in Chapter II, which illusion seems, in spite of all the lessons of history, to " fool some of the people all of the time and all of the people some of the time."

To-day, for instance, it requires the archæological grubbing of an economist to bring to light the commodity bonds used in Massachusetts in 1747. Again, the phrase " it isn't worth a Continental " is the only surviving trace in popular memory of the depreciation of the Continental paper money and scarcely any one who uses that phrase to-day knows its original meaning. Few, in this generation, know anything of the greenback days. Even the more recent " 16 to 1 " excitement, with the remarkable vogue of that seductive book, " Coin's Financial School," and the still more remarkable counter campaign for " sound money," seem dim and distant to-day and have scarcely been

heard of by millions of the younger generation. In 1896 when this "free silver" contest was going on, the interest in money and prices was at fever heat. But, by the following presidential campaign, that interest had grown cold, though the very same presidential candidates, expressing the very same opinions and standing on much the same platforms as in 1896, were in the field. In another four years the question was practically forgotten. There was a fundamental economic cause of this rapid petering out of popular interest; namely, the cessation of the fall of prices complained of and the beginning of a rise.

It appears, then, that public interest in, and understanding of, money usually gathers strength as a price movement proceeds, reaches a maximum at the end of the swing, and remains intense and excited only a few years thereafter.

As prices have now been rising 23 years, we may reasonably expect public interest, as soon as the Peace Treaty excitement has subsided, to grow intense and remain so for a few years at least. If, as I expect, prices continue high, the popular idea that the high prices were due to war-scarcity will have no leg to stand on, and the quest for a satisfactory explanation will go on with the greatest eagerness. A member of the Federal Reserve Board says the price level problem is *the* after-the-war problem. Moreover, as the problem is acute throughout the world, the noise of the discussion will be reënforced by reverberations from one country to another.

Unfortunately, the discussion still shows great bewilderment and confusion of thought. We may say, very solemnly, that seldom was there more need of correct thinking. Without it a misguided public may attempt the impossible; or, like an infuriated mob of lynchers, hang the wrong victim to the lamppost.

But, in spite of the confusion and the great capacity to forget old lessons which the public always exhibits,

some of the hard experiences of history do leave traces of good results.

In Europe, the Napoleonic wars, and in America, the Civil War, seem to have left at least one indelible impression on the minds of business men — that what seems to be a rise in the price of gold bullion in terms of current irredeemable paper money is, in reality, rather a fall in the value of paper money; in short, that it is better to measure paper money in terms of gold than gold in terms of paper money. This idea may be said to be now a commonplace.

I venture to predict that the Great War will have left at least one other indelible impression, marking a new era in popular intelligence on this subject. This new idea, which I believe will sink into the minds of millions of people, is that, just as gold is a stabler standard than paper, so are goods a stabler standard than gold.

The chief reason that the writers of the famous bullion report did not take this step forward is that, in their day and generation, no index number by which to contrast the two existed. They could not go back of gold to commodities. Thus, while they tore off the outer husk surrounding money, the kernel remained hidden from view.

And this has been the situation almost till to-day. One interesting consequence is that, during the Great War, the one anxiety of most governments and bankers as to monetary standards was to avoid a "premium on gold." It was felt that we were in honor bound to prevent paper money and bank deposits from "depreciation." But the only test of depreciation generally recognized was the depreciation of paper money *relatively to gold.* The idea that gold itself could depreciate was conspicuous by its absence. The result was that there was little thought and less effort to keep gold at par with commodities. There were, however, economists in England and the United States and a few business men who did their best to point out the

absurdity of considering money stable simply because there was no open premium on gold.

It is clear now that, in this effort to avoid the reproaches which followed the Napoleonic and the Civil Wars, there was an exaggerated attention to the form rather than the substance, to the letter rather than the spirit.

Sometimes the anxiety to avoid technical depreciation became a little ridiculous and turned into a desire to conceal rather than prevent; for there was, apparently, in some places and times, an unpublished and unacknowledged premium on gold.[1] Some of the efforts to forbid sales of gold seem now somewhat ostrich-like. It was also a little strange, although there were some valid reasons for the practice, to preserve gold reserves by forbidding their use as reserves. This reminds one of the story of the sea captain whose anxiety to keep an adequate supply of life preservers was so great that he nailed them to the deck and forbade anyone to take them up!

It is now getting to be realized that, in spite of all the laudable efforts to prevent the usual war-time depreciation of money, depreciation did actually occur none the less and in a greater degree than in most previous wars. Lord D'Abernon of England remarked in a recent speech in the House of Lords that the fall in the value of money during the four years of the war had exceeded the fall in two preceding centuries. Similar observations are not uncommon from other influential sources and will, I believe, become increasingly frequent and emphatic. It ought not to be surprising if succeeding generations should criticize the inflationistic financiering of the Great War, especially of the European belligerents, as severely as we criticize that of the Civil War.

[1] Although gold sales at a premium were forbidden by Order in Council in England there were illicit sales. On April 24, 1919, for instance, gold was sold at £5 10*s* although the mint price is £3 17*s* 9*d*. The premium on gold was further concealed by the "pegging" of foreign exchanges at government expense. In Russia and Italy the premium on gold was openly admitted. Since the war the premium has been explicit even in England.

In any case, we shall gradually come to feel that our technical prevention of "depreciation" was a hollow mockery, that we have erred in thinking of depreciation as relative to gold instead of as relative to commodities.

The many adjustments of wages during the war by an index number of prices are really a confession that the dollar does change and needs correction. In the future, there will be a cumulative effect on the minds of business men from the tell-tale index number. It will increasingly impress upon them the fact of the dollar's instability and ultimately make some real stabilization inevitable. It will gradually dawn on the public that if the dollar needs correcting the correction should be incorporated in the dollar itself instead of being patched on from the outside.

Just now this problem of the price level is very real and insistent. Business men will long remember that, for months after the ending of the Great War, there was hesitation, amounting almost to paralysis, owing to uncertainty as to the future level of prices. Abroad, the problem of the price level is even more acute, for inflation there proceeded much further than it did here.

Many expect prices to drop. A well-known and influential business man has said that our present high prices continue "without the slightest reason under the sun." There is, however, an uneasy feeling that a fall of prices would be as uncomfortable as was the rise.

Thus, in one way or another, the Great War has demonstrated anew the instability of monetary standards. The present gold standard, supposedly so solid, has been largely discredited in the eyes of many people and we hear of various proposals to replace it by something better.

In view of all the facts, we may reasonably expect that the money fog in the public mind will be more nearly dispelled during the period immediately ahead of us than at any former time in history; first, because the rise in prices has been one of the most rapid and

long continued ever experienced; secondly, because the major part of the rise has been a war phenomenon; thirdly, because the use of index numbers by which the rise in prices is clearly exposed introduces a new, strong, and very persistent reminder of what has occurred; fourthly, because, whatever the reason, there is to-day, to start with, a more general and intelligent understanding of, and interest in, this matter than at any previous time; and fifthly, because at least one practical solution of the problem of stabilizing the price level, hitherto assumed to be insoluble, is now available.

2. The Present Plan Grew Out of the Price Movement Beginning in 1896

I wish now to recur to the influence on public opinion of the rise of prices preceding the war and concentrate attention on that part of this influence which led up to the proposals of this book.

The rise of prices which began in 1896 did not attract much attention for five or ten years. In fact, as has been noted, people continued to talk of prices as abnormally low. The failure of the public to appreciate the situation was illustrated by the lack of literature on the subject.

The list of publications on the high cost of living published in 1910 by the Library of Congress gives for the five-year period, 1896–1900, only 7 titles; while for the next five years, 1901–1905, the number was 36 and, for the next, 1906–1910, it was 121.

As usual, political interest lagged behind public interest. When the High Cost of Living did attract the attention of political leaders and parties it led first to official reports in France, 1900 and 1910; Austria, 1903; Germany, 1909; United States, 1910; Australia, 1911; Canada, 1911; Italy, 1911; Great Britain, 1911 and 1912; New Zealand, 1912; India, 1914.

Many other investigations were projected but never carried out, having been overshadowed by the war.

The chief of these was the project agitated in the years 1911–1913 to hold an international conference on the high cost of living. Those most interested in this proposed conference hoped to see, as one of its results, a study of plans for stabilizing monetary units. This proposed conference was the subject of a special message to Congress in 1912 by President Taft. A bill "for the purpose of considering plans to be submitted to the various Governments for an international inquiry into the high cost of living, its extent, causes, effects, and possible remedies," was passed by the Senate and reported favorably by the Committee on Foreign Affairs of the House of Representatives. Unfortunately it was not reached on the House Calendar before adjournment, March 4, 1913. It was never revived in the next Congress — not because of opposition but because of the preoccupation of the new administration and of Congress with matters of greater importance, or so regarded.

The proposed conference was favored by a number of leading statesmen and financiers in this country and in England, France, Germany, Italy, and Japan. In the Report of the House of Representatives' Committee on Foreign Affairs on this subject 106 prominent men in the United States were mentioned by name as favoring the project, 27 in Great Britain, 35 in France, 13 in Germany, 7 in Austria, 2 in Canada, 2 in Japan, 4 in Switzerland, 3 in Italy, 7 in Belgium, 3 in Holland, 3 in Denmark.

These included Governor (now President) Wilson, the American Secretaries of Commerce and Labor, of War, and of the Treasury, Senator (now President) Poincaré, Signor (now Premier) Nitti, Baron Sakatani, former Minister of Finance of Japan, Lord Courtney of England, many Chambers of Commerce and other organizations in this and other countries. After the failure of the project in the United States, but before the Great War burst upon us, the plan came near being re-

vived by the Canadian and then by the Austrian governments. During the war comparatively little was done or thought concerning the High Cost of Living. The revival of interest now following the war is causing this international conference to be again considered. New Zealand, in particular, has shown an active desire for such a conference. Possibly the conference will actually come about in or through the League of Nations.

3. Approval of the Plan for Stabilizing the Dollar

Whether or not the price-level problem becomes the subject of special international study, it cannot escape solicitous consideration in the immediate future in almost every country on the globe and, in that consideration, the rôle of money cannot be ignored.

In fact I venture to predict that the rôle of money will be increasingly recognized and much faster than is dreamed of by most people. This prediction is based on the reasons given in § 1 above.

The plan described in this book has already run the gantlet of many of the chief minds of the world and has met with almost universal acceptance wherever it has been examined. As one observer expresses it, "only those oppose who do not understand."

The unfavorable opinions and comments have already been dealt with in Appendix II. In this section I shall refer to the favorable opinions.

Of the many other prominent persons — some 200 in number — who have expressed their approval I would mention especially, Arthur T. Hadley, President of Yale University; Royal Meeker, Commissioner of Labor Statistics, Department of Labor; the late Senator Newlands; Senator Robert L. Owen; ex-Senator John F. Shafroth; Clarence H. Kelsey, banker; Henry Lee Higginson, banker; John Perrin, United States Federal Reserve Agent, San Francisco; George Foster Peabody, Director Federal Reserve Bank, New

York; Leo S. Rowe, formerly Assistant Secretary of the Treasury; Roger W. Babson, Babson's Statistical Organization; John Hays Hammond, mining engineer; Sir David M. Barbour, one of the originators of the Gold Exchange Standard introduced in India in 1893; Adolphe Landry, member Chamber of Deputies, Paris; Achille Loria, University of Torino, Italy.

From among the letters received from these and others I select a few quotations:

President Hadley: "I will own that when I first read of the plan I thought it would be very difficult to carry out in practice. On further consideration, I am confident that this difficulty is much less than I at first supposed; and that the advantage to be gained by the adoption of a project of this kind makes it worth while to meet and solve whatever difficulties are incident to its introduction."

Royal Meeker: "I think you have answered all difficulties. Your scheme seems to me to be the simplest and most practical scheme possible to be devised. I most heartily endorse your plan."

John Perrin: "Even if put into effect for this country alone upon the basis of one of our present imperfectly constructed index numbers, it would obviously eliminate largely the fluctuating value of the dollar which now injects such uncertainty into all our dealings. The direct and collateral benefits from such a result are almost beyond conception."

Roger W. Babson: "Your only critics are those who misunderstand you."

Sir David M. Barbour: "I think it likely that some such system may ultimately be adopted."

The American Economic Association Committee on the Purchasing Power of Money, consisting of economists who have chiefly worked in the field of Currency and Banking (*i.e.* Professor B. M. Anderson, Jr., Professor E. W. Kemmerer, Dr. Royal Meeker, Professor Wesley Clair Mitchell, Professor Warren M. Persons, and Professor Irving Fisher), studied the plan with care and expressed itself as follows:

"The Committee regards the stabilizing of the value of monetary units under international agreement as desirable and economically

feasible. The details of the plan, the time of its introduction, and the question whether international agreement is indispensable, should receive the immediate attention of statesmen and economists."

The Bridgeport Chamber of Commerce appointed a committee, the report of which was adopted, and from which report I quote:

"Resolved: That the Bridgeport Chamber of Commerce, recognizing the many evils that flow from the ever-changing value of the dollar, hereby calls upon Congress to enact such legislation, if it be feasible, as shall tend to make the dollar stable at all times in its purchasing power; and to that end it respectfully recommends the adoption, in substantial form, of the plan put forward by Professor Irving Fisher for stabilizing the dollar by adding weight thereto or subtracting therefrom in accordance with the fluctuations of prices as represented by the index numbers."

The Waterbury Chamber of Commerce adopted a similar report, of which the chief paragraph reads:

"Therefore, Be It Resolved, that The Waterbury Chamber of Commerce records itself as in favor of the enactment by Congress of such legislation as is necessary to put Professor Fisher's plan into operation."

The Society of Polish Engineers and Merchants in America passed the following resolution:

"After a thorough discussion of the lecture by Professor Irving Fisher, the members of the Society of Polish Engineers and Merchants and their guests present at this meeting, agree with him unanimously in the soundness of his theory and propose that the Board of Directors of the Society of Polish Engineers and Merchants take the necessary steps to foster this idea in Poland."

The New England Association of Purchasing Agents resolved:

"that we, the New England Association of Purchasing Agents, record our earnest belief that, in the interests of sound business, and justice between contracting parties, the purchasing power of the dollar should be stabilized, either, as we believe has been shown to be feasible, by varying the weight of gold in the dollar, or by such other means as may be found by Congress most expedient."

In Article 10 of the International Trade Union Conference at Berne, February, 1919, it was resolved that:

"the contracting States shall call as soon as possible an international conference instructed to take effective measures to prevent the depreciation of the purchasing power of wages and to insure their payment in a non-depreciated money."

The American Federation of Labor resolved:

"That the Executive Council be and is hereby instructed to make a study of the problem of establishing a dollar of stabilized purchasing power as it may be presented through legislative effort, or otherwise during the year, and to submit a report upon the subject at the 1920 convention."

Mr. Husted of New York introduced a bill in the House of Representatives on Oct. 6, 1919, to create a National Monetary Commission:

". . . to inquire into and report to Congress at the earliest date practicable what changes are necessary or desirable in the monetary system of the United States or in the laws relating to banking and currency, and especially to the end that the purchasing power of the dollar may be stabilized . . . ."

In short, a considerable sentiment for stabilizing the dollar already exists, and there is much more, latent or in solution, which is ready to be precipitated.

I place emphasis on the fact that so many able and practical men have already expressed emphatic approval of the plan because it will be through the leadership of such men that public sentiment for stabilizing the dollar will grow and the great and only obstacle of inertia be overcome.

Inertia is a dangerous state of mind when effective and far-reaching action is sorely needed, as at present.

If the question of stabilization is not faced and solved in an impartial and scientific spirit, we ought not to be surprised if it should become the bone of contention of special interests or if specious but unsound monetary schemes should again find a hearing.

If the price level is left, as it always has been, to chance, the grave evils of this policy, or lack of policy, may be greater in the future than they have been in the past, because of the already inflamed or Bolshevist condition of the public mind.

In short, we now hold the future prosperity and stability of the world in our hands. The situation, both as to the price level and as to public interest in the price level, is such that we have a rare opportunity to take a new step forward in our economic life, a radical step to be sure but one which will save us, as nothing else can, from the dangerous radicalism with which we are now threatened.

APPENDIX V

PRECEDENTS

1. Contracts in Terms of a Commodity

In Appendix IV we have seen many examples of discontent growing out of the instability of monetary standards. Such discontent has often expressed itself in action — sometimes wise and sometimes unwise.

In the present Appendix, examples will be noted of intelligent attempts to meet the evils of monetary instability. These attempts are more numerous than is usually realized and constitute a surprising mass of precedent for every one of the principles of stabilization which, together, constitute the proposal of this book.

I shall begin with the simplest mode of escape from an unsatisfactory monetary standard. This is to make our contracts in terms of some staple commodity, like wheat or iron.

Professor Ferguson of Bryn Mawr tells me that: "In Roman times in Egypt, as well as previously under the Ptolemies, a large number of contracts show that wheat was used in paying rent on farm land, or, if the tenant preferred, coin (usually copper drachmas) to the amount equivalent to the value of wheat."

In England, the "tithe averages" have been made to vary with the value of grain, so that the tithe was, in effect, so much grain, not so much money; or rather it was money measured by grain. Another excellent example is the "Scotch Fiars prices" previously mentioned in another connection. These have existed

for more than two centuries. Rents of farm land are contracted for in terms of grain but paid for in money at the average price of the grain as judicially determined.

In the reign of Queen Elizabeth a statute was passed requiring that one third of the rental of college lands should be expressed in wheat or malt. Blackstone, commenting on this law two centuries afterwards, observed that the one third in wheat or malt rent had come to be generally worth twice as much as the two thirds in money! This saved, for the colleges of England, a very important part of their revenues which would otherwise have become dissipated by the depreciation of money.

Of these acts, Professor Jevons says,[1] "The question arises whether, having regard to these extreme changes in the value of the precious metals, it is desirable to employ them as the standard of value in long lasting contracts. We are forced to admit that the statesmen of Queen Elizabeth were far-seeing."

Mr. C. W. Barron of the Boston News Bureau and the *Wall Street Journal* has supplied me with a more modern instance: On September 8, 1817, David Sears, of Boston, leased to Uriah Cutting, of Boston, for 1000 years from December 1, 1817, at a yearly rental of 10 tons of First Quality of Russia Sables Iron, the land and building thereon at the northeast corner of Scollay Square and Court Street. Similar leases were executed at the time by the same parties on eleven other pieces of property. In each lease the rental is actually payable in money equal in value to the specified amount of iron.

2. The Tabular Standard

Instances have come to light of contracts based on more than one commodity, thus involving the very principle of the index number or "tabular standard."

Twice in the Colonial history of Massachusetts —

[1] In his *Money and the Mechanism of Exchange*, p. 326.

once in 1747 and again in 1780 — a tabular standard was created by law for the payment of soldiers and others as a means of combating the extreme uncertainty and depreciation of paper money.

The latter law lasted till 1786 when the extreme need of such a corrective was over. The correction was based on a crude index number of four commodities.[1]

Most of the foregoing facts regarding Massachusetts are taken from an interesting account of these early experiments with the tabular standard by Professor Willard Fisher.[2] These early gropings toward a goods standard were due to the dissatisfaction, mentioned in Appendix IV, § 1, following the disorganization of monetary standards by the Revolutionary War.

The Great War, also, has driven the industrial world to the use of a composite standard, though in a different way. Wage payments have, for the first time, so far as I know, been adjusted by means of index numbers of prices.

At the close of 1916 several banks, trust companies, and commercial and industrial establishments made special Christmas presents to their employees to compensate partially for the reduced purchasing power of their salaries for the preceding year, the presents being a fixed percentage of the salaries.

[1] The State issued its notes on this basis: "Both Principal and Interest to be paid in the then current Money of said State, in a greater or less Sum, according as Five Bushels of *CORN*, Sixty-eight Pounds and four-seventh Parts of a Pound of *BEEF*, Ten Pounds of *SHEEP'S WOOL*, and Sixteen Pounds of *SOLE LEATHER* shall then cost, more or less than *One Hundred and Thirty Pounds* current Money, at the then current Prices of the said Articles."

The same principle was applied to the payment of sums due the President of Harvard College.

This early example is particularly interesting because it anticipated those economists who are usually credited with originating the idea of a tabular standard, namely Sir George Shuckburgh Evelyn, 1798, Count Soden, 1805, Arthur Young, 1811, Joseph Lowe, 1822.

[2] "The Tabular Standard in Massachusetts," *Quarterly Journal of Economics*, May, 1913.

Apparently most employers who made such adjustments assumed, at first, that they were made once for all. But it was found, of course, that living costs wouldn't "stay put," so that a new adjustment needed to be made next year. This led naturally to the idea of a periodical adjustment. The Bankers' Trust Co., which had made one adjustment, appointed a committee to make further investigation. Its report, made December 15, 1917, covered 22 pages.

The Oneida Community inaugurated, on January 1, 1917, a system of compensation for the high cost of living by the use of Bradstreet's index number for wholesale prices. Each workman receives two weekly pay envelopes — one containing regular wages and the other containing a certain percentage thereof calculated from Bradstreet's number. An initial adjustment of 16 per cent was made as representing the increase in the cost of living between January 1, 1916 (when the general wage scale had been revised), and January 1, 1917. This 16 per cent was applied to the wages for the first month. In each succeeding month a 1 per cent advance or decline of wages was made for each 20 points change in the Bradstreet number.

The Kelley-How-Thomson Co. (hardware), of Duluth, Minnesota, adopted, independently, a similar plan.

The George Worthington Co. (hardware), of Cleveland, Ohio, on October 1, 1917, followed the lead of the Oneida Community, with the exception that all employees were included excepting the directors or salesmen on a commission basis.

The Printz-Biederman Co. (clothing), also of Cleveland, received the idea from the George Worthington Co. The introduction of the plan here was through the employees' organization.

The Mishawaka Woolen Mfg. Co., of Mishawaka, Indiana; and the Union Bleaching & Finishing Co. of Greenville, South Carolina, both pay wages on the basis of index numbers.

The Index Visible, Inc., of New Haven, Connecticut, adopted a simpler plan based on the index number of retail prices of the United States Bureau of Labor Statistics.

Various flouring mills in Seattle and other points in the Northwest have raised the wages of their employees on several occasions. The adjustments were made at irregular intervals, but consciously to meet the increase in living costs. The survey of prices on which the increase was determined was made under the direction of Professor W. F. Ogburn, now of Columbia University, who calculated the index figures finally used. The minimum wage laws in Oregon and Washington were also revised in accordance with the increased cost of living.

The chief use of index numbers in settling wage disputes was in the decisions of the National War Labor Board. Strikes have been settled and wage increases made specifically on the basis of index numbers.

The principle was also recognized by the Shipbuilding Labor Adjustment Board. This board adopted the plan of making half yearly (April 1 and October 1) adjustments of wages in all shipbuilding centers, based on changes in the cost of living as determined for the Board by the United States Bureau of Labor Statistics.

Another application of index numbers is by the War Department, which in fixing the prices at which it disposes of its machine tools is proposing to use an index number, among other factors, to adjust the present prices of sale to the original cost, or price of purchase.

In England, the employees in several branches of the textile trade drew up an agreement with their employers in January, 1918, canceling all previous war bonuses and establishing the regulation of wages by the index number of the cost of living as calculated by the Board of Trade.

The same principle of adjusting wages to the high cost of living has been applied in Australia.

Some of the expedients cited are in permanent use;

others were given up when the special occasions giving them rise were over.

The reason for discontinuing these makeshifts was, in each case, the great inconvenience caused by having *two* standards to deal with. Theoretically, of course, we could use the index number to correct every contract just as it has been used to correct wage contracts, — consulting the index number for adjusting our rent or interest payments or trolley carfares, for instance. But this would not be practicable, certainly not through voluntary adoption by individuals.

3. Correcting the Money Unit Itself

There are instances of legislative action, intended to correct the money unit itself, but falling short of the action proposed in this book. Probably the best example of such correction in current money units themselves is the "gold exchange standard," whereby the silver standard countries have virtually converted their silver units into gold. After the breakdown of bimetallism about 1873, when gold and silver countries began to drift apart, London exchange on India ceased to have any par. Consequently its fluctuations increased and caused great inconvenience to traders between the two countries. Finally, in 1893, the Indian Government stopped the free coinage of silver, giving the Indian rupee a scarcity value and causing it to appreciate above the value of the silver it contained. It was allowed to appreciate until it became worth 16*d*, at which it became virtually redeemable in gold, or, more strictly, in the *right* to gold, situated, not in India, but in London. This device, of redeeming silver in India, in "exchange" on gold in London constituted the famous "gold exchange standard." At the time of its adoption, the gold exchange standard was probably as radical a departure from tradition as a stabilized dollar would be to-day.

The Great War has brought two crude attempts at safeguarding the money of a country against alternate

inflation and contraction. These are the prohibition of import and of export of gold. Sweden, in 1916, defended herself from the golden flood which the war brought by stopping its import, *i.e.* she authorized her State Bank to refuse to accept gold for notes, and this brought the same results as did the stoppage in India of the free coinage of silver in 1893. Swedish money received a scarcity value, and depreciation in terms of commodities was checked ; that is, the rise of prices was arrested.[1] Holland and Spain did much the same thing.

We, as well as practically all other nations, defended ourselves against a possible sudden *drain* of gold by putting an embargo on its export.

4. Conclusion

We see, then, that precedents exist for: (1) setting up a commodity standard to replace the standard of a mere money metal, (2) employing an index number for that purpose, (3) correcting a money metal standard (*e.g.* silver by the gold exchange standard) through a sliding scale relation to another standard.

These are precisely the essentials of the plan to stabilize the dollar.

There is therefore no element of innovation contained in the plan to stabilize the dollar. The only innovation is combining previously tested elements into one complete whole. At the same time we retain our traditional gold as the fundamental money and make no visible change in the money in use. The only essential departure from the system we now have is one quite invisible to all but a few miners, jewelers, exporters and importers, namely, varying, by a fixed rule, the price of gold from the present $20.67 an ounce. It is hard to see why such a change, the only object of which is to prevent any real change in our monetary unit, should be feared by the veriest worshiper of precedent.

[1] Swedish Exchange rose, and (what was one of the most curious results) Swedish notes commanded a premium in gold bullion.

APPENDIX VI

BIBLIOGRAPHY

1. Some of the Chief Index Numbers Current

United States

U. S. Bureau of Labor Statistics. Wholesale. For period beginning 1890. Published annually in separate bulletins. Figures by years and (beginning 1900) months. Number of commodities now 296.

U. S. Bureau of Labor Statistics. Retail. For period beginning 1907. Published at intervals in separate bulletins. Figures by years and (beginning 1913) months. Number of commodities 22 (foods).

Bradstreet's, New York City. Wholesale. For period beginning 1892 (as now published). Published monthly. The index number is found by adding the prices per pound of 96 commodities.

Dun's, New York City. Wholesale. For period beginning 1860. Published monthly. Number of commodities about 200, as reckoned. The exact method of computation has never been published.

The New York Times Annalist. Wholesale. For period beginning 1913. Published weekly (diagram). Number of commodities 25 (foods).

Gibson's, New York City. Wholesale. For period beginning 1912. Published weekly (market letter). Number of commodities 22 (foods).

Canada

Department of Labour. Wholesale. For period beginning 1890. Published in the annual reports of the Department and monthly in the Labour Gazette, its official organ. Number of commodities 271.

Department of Labour. Retail. For period beginning 1900. Published monthly in the Labour Gazette. In 1900 and 1905 index number given for December only; 1913–1916, by years; 1914–1916, for August; beginning July, 1917, monthly. Number of commodities 30 (foods).

GREAT BRITAIN

British Board of Trade. Wholesale. For period beginning 1871. First published in a report of 1903 (with chart for 1801–1902 joining index numbers of Jevons (1801–1846), Sauerbeck (1846–1871), and Board of Trade). Continued annually in the January number of the official Labour Gazette. Based in part on declarations of importers and exporters, and on contract prices at hospitals and institutions. Number of commodities 47.

British Board of Trade. Retail. For period beginning July, 1914. Published monthly in the official Labour Gazette with corresponding figures for other countries. Number of commodities 23 (foods).

Economist. Wholesale. For period beginning 1851. Published monthly in the weekly journal of that name and compiled annually in the first January issue. Number of commodities now 44.

Sauerbeck-Statist. Wholesale. For period beginning 1846. Now published monthly in the Statist, London, with yearly résumé in the March number of the Journal of the Royal Statistical Society. Number of commodities 45.

FRANCE

Annuaire Statistique. Wholesale. For period beginning 1857. Published annually in the Annuaire Statistique de la France. Number of commodities 45.

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For more complete lists and descriptions of current, as well as of discontinued, index numbers see:

U. S. Bureau of Labor Statistics. Bulletin 173, Index Numbers of Wholesale Prices in the United States and Foreign Countries. 1915.

J. Lawrence Laughlin. Principles of Money, pp. 142–224. Scribners, 1903.

Bulletin, Institute internationale de statistique, tome XIX, livraison 3, pp. 124–244. Paris, 1911.

U. S. Library of Congress. Select list of references on the cost of living and prices, 1910. Also: Additional references on the cost of living and prices, 1912.

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For application of index numbers to war prices in different countries see:

Wesley Clair Mitchell. International Price Comparisons. War Industries Board. Price Bulletin No. 2. 1919.

2. Some of the Chief Writings on the Principles of Index Numbers

William Stanley Jevons. Investigations in currency and finance. Sections II–IV, pp. 13–150, give an index number computed from 39 articles from 1782 to 1865. London, 1909. (Reprints of various articles published earlier.)

F. Y. Edgeworth. Reports of the Committee (of the British Association for the Advancement of Science) appointed for the purpose of investigating the best methods of ascertaining and measuring variations in the value of the monetary standard. In Reports of the Association for 1887, pp. 247–301; 1888, pp. 188–219; 1889, pp. 133–164.

Correa Moylan Walsh. The measurement of general exchange-value. 580 pp. Macmillan, 1901.

G. H. Knibbs. Prices, Price Indexes, and Cost of Living in Australia. Commonwealth Bureau of Census and Statistics, Labour and Industrial Branch, Report No. 1, Appendix. McCarron, Bird & Co., Melbourne. December, 1912.

G. H. Knibbs. Price Indexes, their Nature and Limitations, the Technique of Computing them, and their Application in Ascertaining the Purchasing-Power of Money. Commonwealth Bureau of Census and Statistics, Labour and Industrial Branch, Report No. 9. McCarron, Bird & Co., Melbourne. 1918.

Irving Fisher. The Purchasing Power of Money, Chapter 10 and Appendix to Chapter 10. Macmillan, 1911.

Wesley Clair Mitchell. The Making and Using of Index Numbers, U. S. Bureau of Labor Statistics, Bulletin No. 173, pp. 5–114, 1915.

3. Remote Anticipations of the Plan to Stabilize the Dollar

A. Bimetallism. There would be little use, even if it were possible, to include all writings which touch on the need for combating the instability of monetary standards. I shall, therefore, merely run over, very briefly, the proposals which anticipate only remotely the proposal of this book. These fall under four heads:

Bimetallism and other schemes for combining the precious metals.

The Gold Exchange Standard.

Irredeemable Paper Money, the quantity to be regulated by reference to the tabular standard.

The Tabular Standard.

In this subsection *A* will be considered the first of these.

The literature on bimetallism is, of course, enormous. Bibliographies were published in the '90s by Soetbeer and others. The nature of the proposal, including the claim that it would stabilize the price level, is well set forth in Francis A. Walker's *International Bimetallism*, N. Y., Holt, 1896, and Major Leonard Darwin's *Bimetallism*, London, Murray, 1897.

That bimetallism would work under certain circumstances but would break down under certain other circumstances has been shown by Irving Fisher, in "Mechanics of Bimetallism," *Economic Journal*, Sept. 1899, pp. 527–537.

Professor F. Y. Edgeworth has shown that bimetallism would, on the theory of probability, have only a slight influence toward stabilization and that "symmetallism" would be somewhat more stable than bimetallism. ("Thoughts on Monetary Reform," *Economic Journal*, Sept. 1895, pp. 434–451.)

What Professor Edgeworth named "symmetallism" is a method first proposed, apparently, by Professor Alfred Marshall[1] for joining two metals virtually in a joint coin, obviating the danger of a breakdown to which bimetallism is always subject.

Other proposals of this sort for joining two metals have been made, *e.g.* by Dr. Theodor Hertzka in *Das Internationale Wahrungsproblem und dessen Lösung*, 1892, and Mr. A. P. Stokes in *Joint Metallism*, 1894. Léon Walras, in *Théorie de la Monnaie*, Lausanne, 1886, advocates, rather than bimetallism, a system of gold money with a variable amount of silver bullion to be issued or recalled as a "regulator."

B. Gold Exchange Standard. The idea of the gold exchange standard was, apparently, first proposed in

[1] Evidence before the Gold and Silver Commission (1888) Q. 9, 837; and "Principles of Economics," Book V, ch. 6.

1876 by A. M. Lindsay, treasurer of the Bank of Bengal. The idea was suggested to him by reading Ricardo's *Proposals for an Economical and Secure Currency*.[1] Lindsay published a pamphlet on the subject in 1892 entitled *Ricardo's Exchange Remedy, a Proposal to Regulate the Indian Currency by Making it Expand and Contract Automatically at Fixed Sterling Rates with the Aid of the Silver Clause of the Bank Act.* London (Effingham, Wilson & Co.), 36 pp.

The first step toward applying Lindsay's idea was taken in 1893, when, as a consequence of the work of Sir David Barbour and the other members of the Herschell Committee on Indian Currency, the Indian Mints were closed to silver and, consequently, the rupee was given a scarcity value above that of its contained silver.

The second step was taken in 1898 when a gold reserve was begun. The full-fledged gold exchange standard was first put in force in 1900, when rupees in India were virtually made redeemable in gold in London through bills of exchange on London.

A different plan for preventing money in silver standard countries from sinking in value relatively to gold was to impose a seigniorage on silver coinage increasing as the price of silver decreased. This proposal was made by Henry Coke before the Herschell Committee in 1893 (§139). In principle, it is nearer the proposal of this book than is the gold exchange standard.

Fuller information concerning the gold exchange system and other plans of currency reform will be found in E. W. Kemmerer's *Modern Currency Reforms*, Macmillan, 1916.

C. Irredeemable Paper Money. This dangerous expedient has always had its advocates, and these have

[1] Ricardo's plan, however, did not go further than merely to propose abolishing gold coin and substituting gold bullion as a reserve, using paper for actual circulation, the Government to sell and buy gold, for paper, at the pleasure of the public, with a slight margin (1½%) between the two prices. It will be seen that Ricardo's proposal was like that of this book except that the prices set were not to vary.

usually been inflationists. But a considerable number have proposed a paper money regulated by an index number of prices. Such a plan is in purpose similar to, but in method very different from, the proposal of this book. The essential difference is that between redeemability and irredeemability.

Among the many who have suggested this form of monetary system are:

Carl Menger, the Austrian economist, who suggested that the price level could be stabilized by the issue of paper money, as required, to neutralize fluctuations of purchasing power; *Charles Gide*, who in *Principles of Political Economy* (1883) speaks favorably of Menger's proposal, but favors it only in the form of international paper money; *E. Benjamin Andrews, An Honest Dollar* (1889), pp. 36–42; *Henry Winn*, "The Invariable Dollar," *The Traveler*, Oct. 17, 1891; *Arthur Kitson*, "A Scientific Solution of the Money Question," *The Arena*, 1895; *Eltweed Pomeroy*, "The Multiple Standard for Money," *The Arena*, Sept. 1897; *Frank Parsons*, "Rational Money" (1898), who would effect the expansion or contraction of currency through the use of call bonds, or a sliding scale of interest on government loans, etc., in accordance with the movement of prices [this book contains a discussion of most of the above references and mentions others]; *Alfred Russel Wallace*, "Paper Money as a Standard of Value" (originally in *The Academy*, Dec. 31, 1898, and reprinted in *Studies, Scientific and Social*, Vol. II, London, 1900).

D. The Tabular Standard. This has been described in Appendix III, §6. One of the earliest writers on this method of correcting aberrations in the monetary standard was Joseph Lowe, who, in his *Present State of England in Regard to Agriculture, Trade and Finance*, Chap. LX (London, 1822), proposed "to correct the legal standard of value (or at least, to afford to individuals the means of ascertaining its errors), by the periodical publication of an authentic price current, containing a list of a large number of articles in general

use, arranged in quantities corresponding to their relative consumption, so as to give the rise or fall, from time to time, of the mean of prices; which will indicate, with all the exactness desirable for commercial purposes, the variations in the value of money; and enable individuals, if they shall think fit, to regulate their pecuniary engagements by reference to this *tabular standard.*"

Another writer who made the same suggestion was G. Poulett Scrope, M. P., *An Examination of the Bank Charter Question, with an Inquiry into the Nature of a Just Standard of Value* (London, 1833), p. 26, and *Principles of Political Economy* (London, 1833), p. 406.

Another was Mr. G. R. Porter, *The Progress of the Nation* (Sections III and IV, p. 235). He added a table showing the average fluctuations of fifty commodities monthly during the years 1833 and 1837.

W. Stanley Jevons was an enthusiastic advocate of this plan. In his *Money and the Mechanism of Exchange* (London, 1893), Chap. XXV, he discusses Lowe's, Scrope's, and Porter's proposals, and comments: "Such schemes for a tabular or average standard of value appear to be perfectly sound and highly valuable in a theoretical point of view, and the practical difficulties are not of a serious character. To carry Lowe's and Scrope's plans into effect, a permanent government commission would have to be created, and endowed with a kind of judicial power. The officers of the department would collect the current prices of commodities in all the principal markets of the kingdom, and, by a well-defined system of calculations, would compute from these data the average variations in the purchasing power of gold. The decisions of this commission would be published monthly, and payments would be adjusted in accordance with them."

"At first the use of this national tabular standard might be permissive, so that it could be enforced only where the parties to the contract had inserted a clause to that effect in their contract. After the practicabil-

ity and utility of the plan had become sufficiently demonstrated, it might be made compulsory, in the sense that every money debt of, say, more than three months' standing, would be varied according to the tabular standard, in the absence of an express provision to the contrary."

As shown in Appendix V, §2, plans very similar to the above are now actually employed to some extent.

4. Direct Anticipations

We next cite the writings which describe plans substantially like that proposed in this book (*i.e.* plans for adjusting the weight of gold in a monetary unit by the aid of an index number of prices) and which were published earlier than the author's *Purchasing Power of Money*. For others who anticipated the idea but did not publish, see Preface.

John Rooke. Inquiry into the Principles of National Wealth. Edinburgh, 1824.

"The regulation of the new system is, that in whatever proportion the *general* and annual price of farm labour throughout the kingdom has a tendency to rise or fall, that rise or fall shall be counteracted by a reverse rise or fall in the current price of the gold and silver coin," p. 221.

"It would probably be advisable to discard the gold coin from circulation almost entirely, and employ it chiefly as the grand corrector of the value of bank paper," p. 222.

Simon Newcomb. The Standard of Value. The North American Review, Sept. 1879, pp. 234–237.

"The first and most obvious method of attaining the object is to issue a paper currency which shall be redeemable, not in gold dollars of fixed weight, but in such quantities of gold and silver bullion as shall suffice to make the required purchases." [Newcomb also anticipated the device, shown in Appendix I, §5, for retaining gold coins in circulation, if desired.]

Alfred Marshall. Remedies for Fluctuations of General Prices. The Contemporary Review, March, 1887, p. 371, footnote. [Marshall gives two possible plans (neither of which is advocated). One is for an inconvertible currency to be issued (by purchase of consols) whenever a sovereign is worth in commodities more than par and retired (by sale of consols) whenever it is worth less. The other is for a convertible currency,

each £ note being redeemable at any time in as much as is then worth (in commodities) half the unit together with as much silver as is worth the other half.

The second plan is, in principle, virtually that of this book.]

Aneurin Williams. A "Fixed Value of Bullion" Standard — A proposal for preventing general fluctuations in trade. Economic Journal (London), June, 1892, pp. 280–289. Discussion by Sir Robert Giffen, "Fancy Monetary Standards," *ibid.*, pp. 463–471; reply by Aneurin Williams, pp. 747–749. [The proposal here made is practically identical with that of this book.]

J. Allen Smith. A Multiple Money Standard. The Annals of the American Academy of Political and Social Science, March 1896, pp. 1–60.

[Smith suggests several plans for stabilizing the purchasing power of monetary units, among them one which, in all essentials, is identical with that proposed in this book.]

D. J. Tinnes. An Ideal Measure of Value. The Adrian (Minnesota) Guardian, Nov. 16, 1896.

[The proposal made here and in Mr. Tinnes' subsequent publications, mentioned in the list below, is practically identical with that of this book.]

5. Recent Writings on Stabilizing the Dollar

(Omitting most newspaper and minor publications, numbering about a thousand)

Irving Fisher. The Purchasing Power of Money. New York, Macmillan, 1911, Ch. 13.

O. M. W. Sprague. Fisher's Purchasing Power of Money. Quarterly Journal of Economics, Nov. 1911, pp. 148–151.

Irving Fisher. International Conference Regarding the Cost of Living. Report before Congress of Chambers of Commerce. Boston, Sept. 1912, reprinted in Independent, Sept. 26, 1912, pp. 700–706.

Commercial and Financial Chronicle, Editorial, Oct. 5, 1912. Replies by Irving Fisher and further discussion, Oct. 26, and Nov. 16, 1912.

Irving Fisher. Standardizing the Dollar (replies to objections). New York Times, Dec. 22, 1912.

Irving Fisher. A More Stable Gold Standard. Economic Journal (London), Dec. 1912, pp. 570–576.

William F. Blackman. The Increasing Cost of Living; Its Cause and Cure. Rollins College Bulletin, Dec. 1912.

Lucien March. Un Projet de Stabilization des Prix. Communi-

cation à la Société de Statistique de Paris, le 15 janvier, 1913, reprinted from its journal, pp. 10–24. Discussion by Edmond Théry, G. Roulleau, Aug. Deschamps, Adolphe Landry, Lucien March, Irving Fisher.

Irving Fisher. A Compensated Dollar. Quarterly Journal of Economics, Feb. 1913, pp. 213–235. Appendices, pp. 385–397.

Irving Fisher. Standardizing the Dollar. American Economic Review Supplement, March 1913, pp. 20–28. Discussion by Nat. C. Murray, Albert C. Whitaker, Willard C. Fisher, O. M. W. Sprague, B. M. Anderson, Jr., R. R. Bowker, E. W. Kemmerer, and Irving Fisher, *ibid.*, pp. 29–51.

David Kinley. Objections to a Monetary Standard Based on Index Numbers. American Economic Review, March 1913, pp. 1–19.

Augusto Graziani. Di una nuova proposta per rendere più stabile il valore della moneta. Reale Instituto d'Incoraggiamento di Napoli. Nota letta nella tornata del 6 marzo 1913. (Napoli, Coöperative Tipografica, 1913.)

Peyton R. Anness. The Compensated Dollar. Yale Scientific Monthly, March 1913.

Corrado Gini. L'equazione dello scambio e il potere di acquisito della moneta. Revista Italiana di Sociologia, Rome, Anno XVII, Fasc. II (March–April 1913).

E. B. Wilson. Review of the Purchasing Power of Money. Science, May 16, 1913, pp. 761–763.

F. W. Taussig. The Plan for a Compensated Dollar. Quarterly Journal of Economics, May 1913, pp. 401–416.

F. Zeuthen. Irving Fisher's Forslag til Prisniveauets Stabilisering. Nationalökonomisk Tidskrift (Copenhagen), Hefte 4 (July–Aug., 1913), pp. 350–364.

Irving Fisher. What an International Conference on the High Cost of Living Could Do. Institut International de Statistique, Vienna, XIVe Session, Rapports, no. 25, Sept. 1913.

J. M. Clark. Possible Complications of the Compensated Dollar. American Economic Review, Sept. 1913, pp. 576–588.

E. M. Patterson. Objections to a Compensated Dollar. American Economic Review, Sept. 1913, pp. 863–875.

Irving Fisher. La Hausse Actuelle de la Monnaie, du Crédit et des Prix, Comment y Remédier. Revue d'Economie Politique, Paris, 1913, pp. 419–434.

Irving Fisher. De la Nécessité d'une Conférence Internationale sur le Coût de la Vie. La Vie Internationale, Brussels, Tome III, Fasc. 12 (1913), pp. 295–311.

G. M. Boissevain. "Een Ideale Waarde-Standaard?" De Economist, The Hague, 1913, pp. 441–473.

David Davidson. Irving Fisher's förslag att reglera penningens köpkraft. Economisk Tidskrift (Stockholm), Haft 3, 1913, pp. 88–107.

W. Eggenschwyler. Review of article in American Economic Review Supplement, March 1913. Archiv für Sozialwissenschaft und Sozialpolitik, Tübingen, Germany, Band 37, Heft I, July 1913, pp. 258–264.

Irving Fisher. Objections to a Compensated Dollar Answered. American Economic Review, Dec. 1914, pp. 818–839.

D. J. Tinnes. Tinnes' Market Gage Dollar an Ideal Measure of Value. Leaflets 1–4, Privately published, 1917.

Irving Fisher. Standardizing the Dollar. University of California Chronicle, October 1917, pp. 347–363.

D. J. Tinnes. The Market Gage Dollar (An Ideal Measure of Value). The Quarterly Journal of the University of North Dakota, Jan. 1918, pp. 187–192.

Irving Fisher. Stabilizing the Dollar in Purchasing Power. (In American Problems of Reconstruction, Elisha Friedman, Editor, New York, Dutton, 1918, pp. 361–390.)

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G. H. Knibbs. Consideration of the Proposal to Stabilize the Unit of Money. American Economic Review, June 1919, pp. 244–255. Rejoinder by Irving Fisher, pp. 256–262.

D. J. Tinnes. An American Standard of Value. American Economic Review, June 1919, pp. 263–266.

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